No. 620,016. Patented Feb. 21, 1899.

C. D. CLIPFELL.

AUTOMATIC SWINGING STACKER.

(Application filed June 14, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig 1.

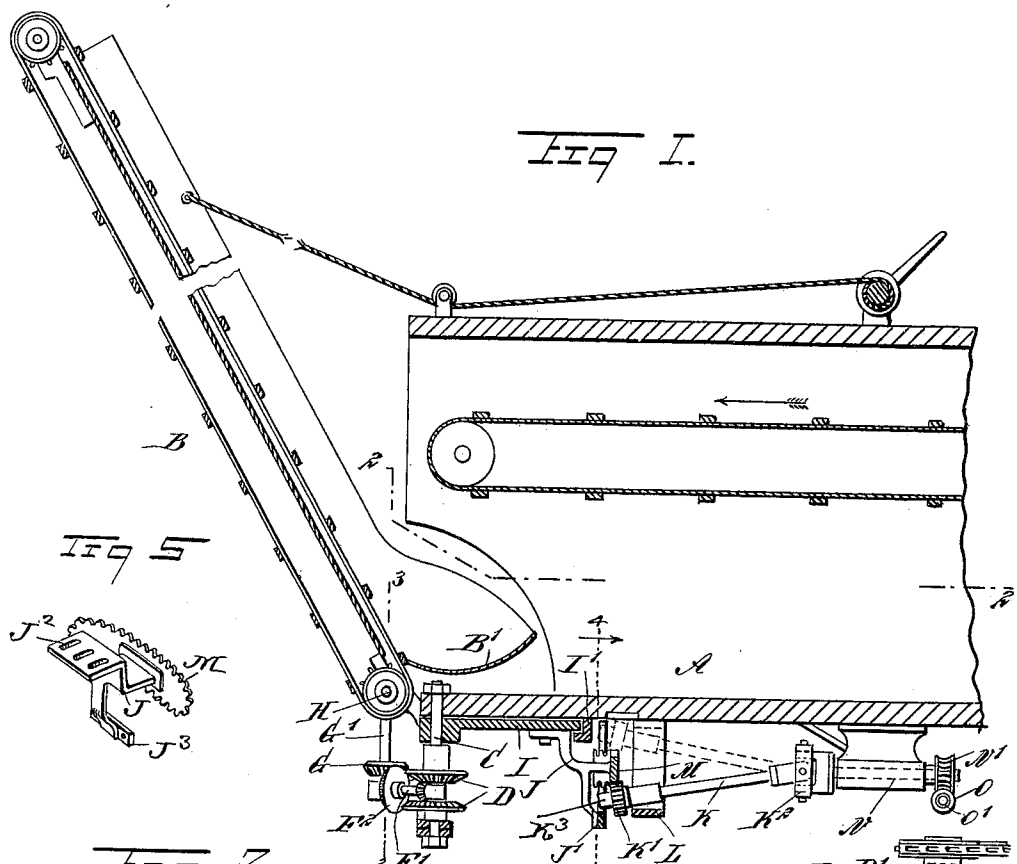
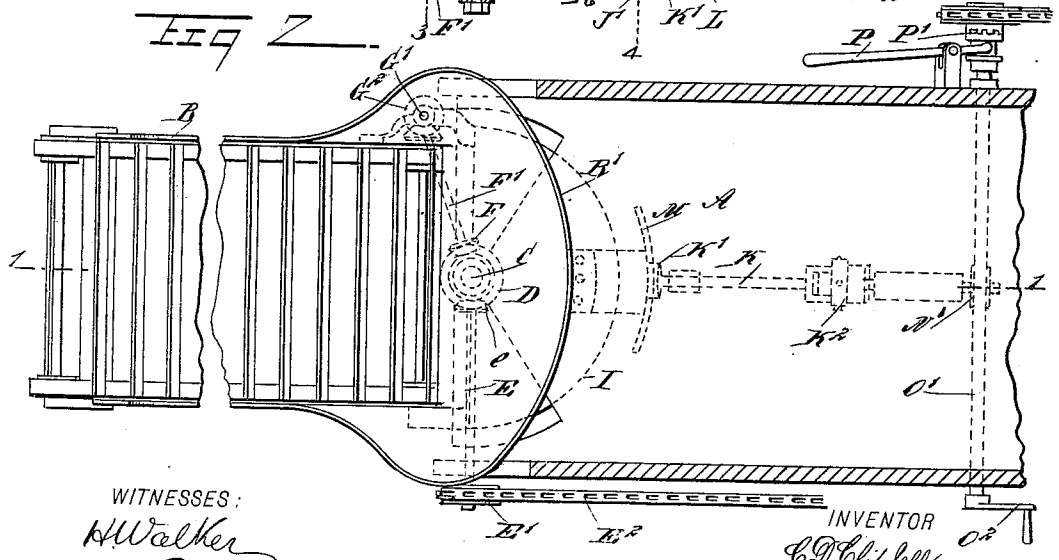


Fig 5

Fig 2



WITNESSES:
H. Walker
H. L. Reynolds

INVENTOR
C. D. Clipfell
BY
Munn & Co
ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig 3.

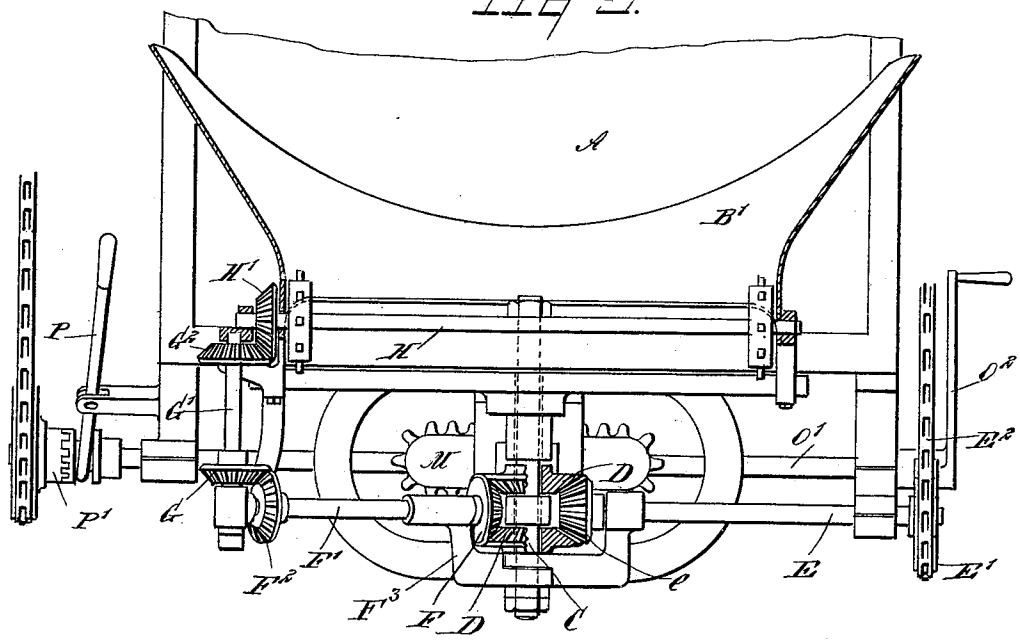
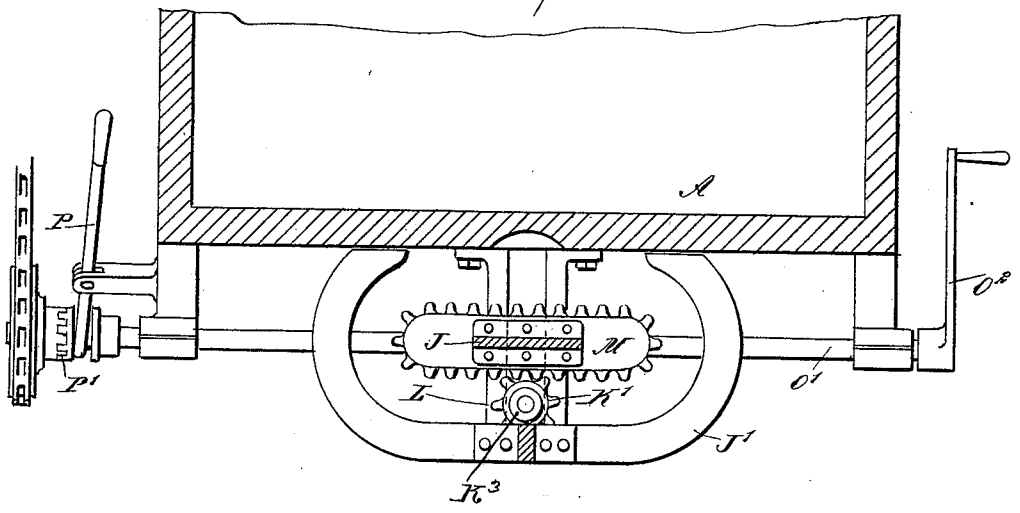


Fig 4.



WITNESSES:

H. Walker

D. L. Reynolds.

INVENTOR

C. D. Clipfell

BY Munn

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CARROLL DALE CLIPFELL, OF REDWOOD FALLS, MINNESOTA.

AUTOMATIC SWINGING STACKER.

SPECIFICATION forming part of Letters Patent No. 620,016, dated February 21, 1899.

Application filed June 14, 1898. Serial No. 683,394. (No model.)

To all whom it may concern:

Be it known that I, CARROLL DALE CLIPFELL, of Redwood Falls, in the county of Redwood and State of Minnesota, have invented a new and Improved Automatic Swinging Stacker, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the straw-stackers attached to threshing-machines of that class which are swung upon their pivots so as to deposit the straw in a circle.

My invention comprises the novel features hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal sectional elevation on the line 1 1 in Fig. 2 through a portion of the threshing-machine and the stacker. Fig. 2 is a top plan view, the threshing-machine body being shown in section on the line 2 2 in Fig. 1. Fig. 3 is a rear elevation of the machine, showing the automatic swinging mechanism, the stacker being in section on the line 3 3 in Fig. 1; and Fig. 4 is a rear elevation, partly in section, on the line 4 4 of Fig. 1. Fig. 5 is a perspective view showing the arm carrying the rack-bar by which the stacker is swung.

The threshing-machine body A may be of any usual construction. To the rear end of said body and at its bottom is fixed a vertical pivot-shaft C, upon which the stacker swings. This shaft is placed centrally of the width of the threshing-machine and the stacker. The stacker B is of any ordinary construction and comprises a chute having belts thereon connected with cross-slats, by means of which the straw is elevated. A plate I is secured to the frame upon which the stacker is carried and lies just below the bottom of the threshing-machine body. This plate I is preferably of a circular shape and is held in position beneath the body of the threshing-machine by a guide I'.

The endless belt upon the stacker, and by which the straw is elevated, is operated in the following manner: A horizontal shaft H, similar in construction to that ordinarily used, is journaled in the lower end of the stacker. This shaft carries the elevating-belts and at one end has a bevel-gear H', which meshes with a bevel-gear G^2 upon the upper end of a vertical shaft G'. To the lower end of this shaft is fixed a bevel-gear G, which meshes with a bevel-gear F^2 on a horizontal shaft F'. A sprocket-wheel-and-chain connection may be used between the shafts F' and H instead of the bevel-gears. The shaft F' is mounted in bearings upon a frame F^3, which pivots about the vertical pivot-shaft C and extends in a radial direction therefrom. At its inner end it is provided with a bevel-gear F, which meshes with the two bevel-gears D, the latter being mounted loosely upon the pivot-shaft C. The bevel-gears D are turned by a pinion *e*, mounted upon a horizontal shaft E, which is fixedly secured in the frame and is rotated by means of a sprocket-wheel E', secured to the outer end thereof, and a chain E^2, which is connected with any suitable driving-wheel. Belts and pulleys may be used in place of the sprocket wheel and chain. With this driving means it is evident that the stacker may be swung upon its pivot in any direction desired without interfering with its operation.

To the outer edge of the semicircular plate I is secured a frame J. (Shown in perspective view in Fig. 5.) This frame is secured to the plate I by means of bolts which pass through slots J^2, by which the frame J may have a slight adjustment toward and from the pivot-shaft C. This frame J carries a bar M, which is curved so as to form an arc of a circle with the pivot-shaft C as a center. This bar M is provided with teeth upon its upper and lower edges and which also extend about the ends thereof. The frame J also carries a guide or retaining bar J', which is secured to a lower extension J^3 and surrounds the plate M at an even distance therefrom. This forms a track for the roller K^3 upon the shaft K, and thus holds the pinion K' in engagement with the rack-bar N.

A laterally-extending shaft O' is mounted on the machine and is provided with a worm O, engaging a worm-wheel N', mounted upon a longitudinally-extending shaft N. The other end of the shaft N is provided with a universal joint K^2, to which is connected a swinging shaft K. The shaft K is provided with a pinion K', adapted to engage the teeth

upon the curved bar M, and this end of the shaft engages the guide or retaining bar J′, so that the pinion is held steadily in engagement with the rack-teeth upon the bar M. The shaft K is restrained, so as to swing in a vertical plane, by means of a guide L, which consists of two bars lying one upon each side of the shaft and supported from the body of the machine. The swinging portion of the stacker may be operated at any angle with the body of the separator.

For convenience in swinging the stacker by hand the shaft O′ is provided with a crank O^2, which may be removed when desired. In order to throw the swinging device out of operation at any time desired, the shaft O′ is rotated by means of a clutch connection P′, which is operated by a hand-lever P. The toothed plate or rack M may be made of any length desired, the length thereof determining the amount of swing given to the stacker and the number of teeth at its ends the amount of rest at the end of the swing. The plate M may be made removable from the frame J, as indicated in Fig. 4. When the plate M is changed, the guide-bar J′ should be changed correspondingly. To the lower end of the stacker is attached a hood or apron B′, which is adapted to catch the straw as delivered from the machine. This hood or apron is made wider than the stacker, so as to make sure of catching all the straw, even when the stacker is swung to its limit at one side.

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

1. An automatic swinging straw-stacker, comprising a straw-elevator pivoted at its lower end to swing horizontally, a curved bar carried by the swinging stacker and having teeth upon its upper and lower edges and about its ends, an inclosing guide-bar also carried by the swinging stacker, a shaft having a pinion engaging said curved bar, a pivotal driving connection, and means for limiting the swinging of the shaft to a vertical plane.

2. An automatic swinging straw-stacker, comprising a straw-elevator pivoted at its lower end to swing horizontally, means for operating the same, a curved bar carried by the swinging stacker and having teeth upon its upper and lower edges and about its ends, an inclosing guide-bar also carried by the swinging stacker, a shaft having a pinion engaging the teeth of said curved bar, and a pivotal driving connection, and fixed vertical guides engaging the swinging end of the shaft and limiting its movement to a vertical plane.

3. An automatic swinging straw-stacker, comprising an automatic swinging straw-elevator pivoted at its lower end to swing horizontally, means for operating the same, a curved bar carried by the swinging stacker and having teeth upon its upper and lower edges and about its ends, an inclosing guide-bar also carried by the swinging straw-stacker, said toothed bar and inclosing guide being carried by a plate mounted upon the stacker so as to be adjustable toward and from its pivot, a shaft having a pinion engaging said toothed bar, and a pivotal driving connection, and means for limiting the swing of the shaft to a vertical plane.

CARROLL DALE CLIPFELL.

Witnesses:
FRED L. WARNER,
H. F. CLIPFELL.