

(No Model.)

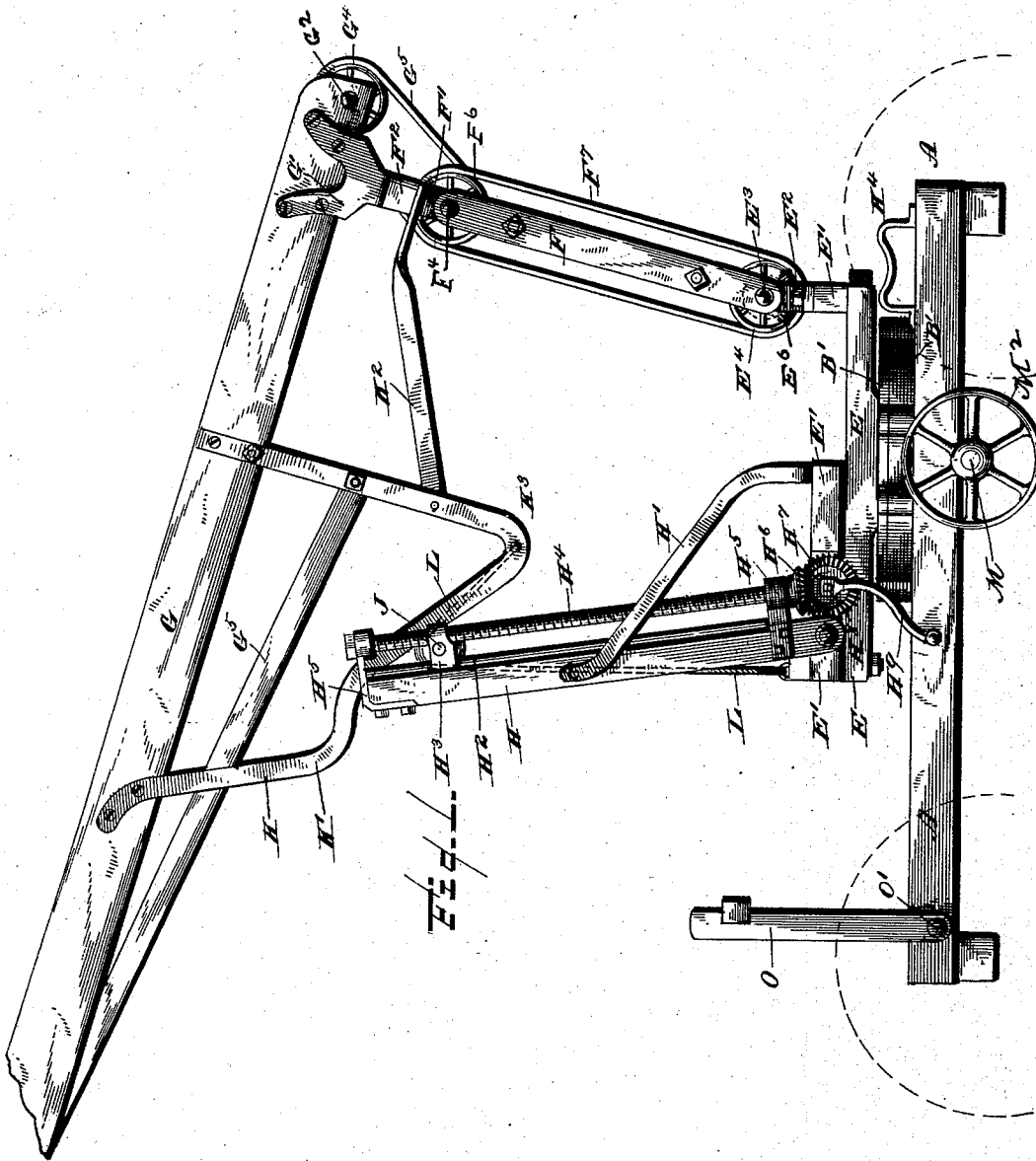
3 Sheets—Sheet 1.

M. HEINECKE.

STRAW STACKER.

No. 384,974.

Patented June 26, 1888.



Witnesses:
S. C. Hills.
W. S. Swall.

Inventor:
Martin Heinecke.
by *E. S. Stocking.*
Attorney.

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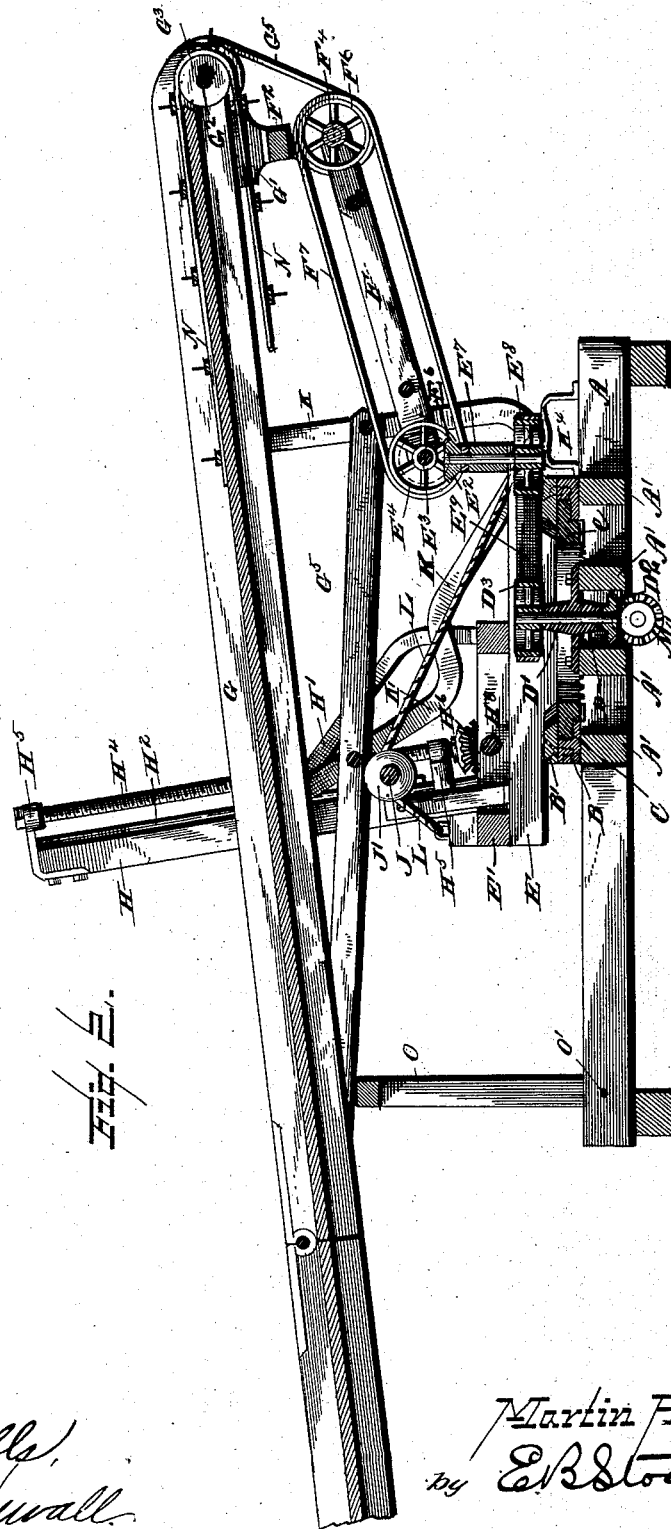
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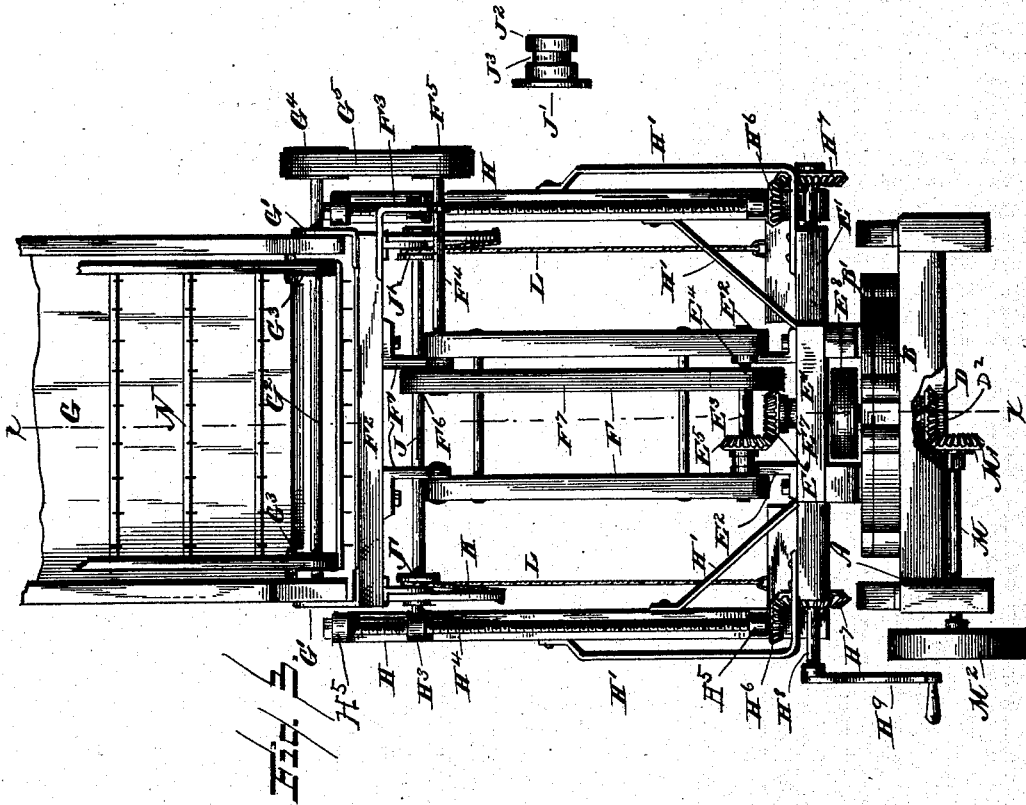
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UNITED STATES PATENT OFFICE.

MARTIN HEINECKE, OF CARLINVILLE, ILLINOIS.

STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 384,974, dated June 26, 1888.

Application filed December 8, 1887. Serial No. 237,288. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HEINECKE, a citizen of the United States, residing at Carlinville, in the county of Macoupin, State of Illinois, have invented certain new and useful Improvements in Straw-Stackers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to automatic straw stackers or carriers, and among the objects in view are to simplify the construction and reduce the number of parts and provide a stacker the delivery-table of which can be raised or lowered and projected or withdrawn easily and conveniently, and at the same time maintain proper connections with the various power-transmitting devices.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a straw carrier or stacker constructed in accordance with my invention. Fig. 2 is a longitudinal section on the line *x x* of Fig. 3. Fig. 3 is a front elevation.

Like letters indicate like parts in all the figures of the drawings.

A represents the usual rectangular truck-frame, which is mounted upon suitable wheels. (Not shown.) The frame A is provided at its front end with suitable tie-bars, A', which form the support for an annular shoulder plate or ring, B, upon which is secured by suitable bolts a companion plate or ring, B'.

Interposed between the two plates B B' is a master-gear, C, the teeth of which depend from its under surface and the flange of which is embraced by and works in the bearing formed by the two inner faces of the plates B B'.

Bolted to the two intermediate tie-bars, A', is a bracket, D, in which is journaled a vertical shaft, D', carrying at its lower end a bevel-gear, D², and at its upper end a belt-pulley, D³, which pulley and shaft project up over the annular recess formed by the plates B B' and gear C. A sufficient portion of the upper face of the master-gear C, which is in reality a turn-table for the straw-carrier proper, is exposed, and upon the same is rigidly secured a rotatable frame, E, upon which, as will be hereinafter described, are mounted the movable portions of the carrier.

Any suitable mechanism may be provided

for rotating or oscillating the turn-table C in its bearings—such, for instance, as shown in my patent No. 363,234, granted May 17, 1887.

The frame E is provided with cross-bar E' at its rear ends, and upon the front cross-bar and at each side *g* thereof are located suitable brackets, E², in which is journaled a cross-shaft, E³, carrying an intermediate belt-pulley, E⁴, and bevel-gear E⁵, which gear meshes with a similar gear, E⁶, mounted at the upper end of a vertical shaft, E⁷, provided at its lower end with a belt-pulley, E⁸, and connected to the pulley D³ by means of a belt, E⁹.

Pivoted on each end of the shaft E⁷ are supports F, which are connected at their upper ends by means of brackets F' to a cross-bar, F². Journaled in one of the brackets, F', and in a companion bracket, F³, at that end of the cross-bar F², is a shaft, F⁴, having at its outer end a fixed pulley, F⁵, and at its inner end a similar pulley, F⁶, the latter being connected by a belt, F⁷, to the pulley E⁴.

G represents the carrier-frame, the rear end of which is pivotally connected by means of brackets G' with the cross-bar F², which connections support the front end of the carrier-frame and permit of its rear end being raised or lowered and thrown to the front and withdrawn to the rear by suitable mechanism, hereinafter to be described. Through the front end of the table passes the usual shaft, G², carrying pulleys G³ at each end, over which the endless apron N is operated by means of a pulley, G⁴, and a belt, G⁵, connecting said pulley with the pulley F⁵ below the same.

From the rear end of the movable frame E are rigid vertical risers or uprights H—one at each side of said frame—which are supported in position upon the frame by means of diagonal braces H'. Upon the front faces of the risers H are secured a dovetailed track or rib, H², which is embraced by a traveling block, H³, having an interiorly screw-threaded opening at its forward end, which receives and is operated by a vertical screw-threaded shaft, H⁴, journaled in suitable bearings, H⁵, at the top and bottom of said upright. The lower end of the vertical screw-threaded shaft H⁴ is provided with a miter-gear, H⁶, which meshes with and is operated by a similar gear, H⁷, mounted upon a transverse shaft, H⁸, passing through the frame-work. The shaft H⁸ is operated by means of a crank, H⁹, the gear H⁷ being duplicated at the opposite end of said

shaft. By this construction the rotation of the shaft H³ and its gear H⁷ will impart rotation to the vertical screw-threaded shaft H⁴ and cause the blocks H³ to travel up and down in their guides H², in accordance with the direction of rotation of the crank H⁹.

Loosely mounted upon a cross-shaft, J, the ends of which are journaled in bearings formed in the sides of the blocks H³, are guiding-spools J'—one at each side of said shaft. The spools J' are formed with an outer track-surface, J², and an intermediate rope-guiding groove, J³, as shown in the detail at the right of Fig. 3. Extending forwardly and slightly depending from the carrier-frame G are diagonal braces G³, which are secured to carrier-frame-supporting guides K. The guides K are somewhat triangular in shape, the base of said triangle being uppermost and bolted to the carrier-frame G, as shown in Fig. 1. Between the base and the lower point of angle of the guides are formed outwardly-projecting curved guiding portions K'. Those portions (there being one at each side of the carrier-frame G) of the guides K between its depending point and the end of its forwardly-projecting portions are designed to rest upon the track guiding-surface of the spools J'. When the carrier-frame reaches such a point in its depressed position that the guides K pass from contact with the spools J', as shown in Fig. 2, the braces G⁶ perform the same functions of a track, in that it rests upon the spools J' and permits of a still further depression of said table.

Connected to the lower ends of the guides K are chains or ropes L, (see Fig. 2,) which ropes or chains are passed forward and over the spools J', resting in the grooves J³ thereof, and have their ends secured to the cross-bar E' or other suitable portion of the frame-work. By this construction, as the blocks H³ are fed upward upon the screw-threaded shaft H⁴, the shaft and spools J J' are also carried upward, and with them the guides K and carrier-frame G.

The front mechanism and support of said carrier-frame swing up and down, as shown in Figs. 1 and 2, and as previously described. As the carrier-frame is raised the tension of the rope or chain L is increased and it draws upon the lower end of the guides K, and causes the front carrier-frame-supporting mechanism and the carrier-frame to swing rearward, which is permitted, so far as the guards are concerned, by the outwardly-curved portion K' thereof. Braces K² connect the forward ends of the guards K with the cross-bar F², and lend additional strength to the structure.

M represents the power-shaft, which is journaled in bearings fixed to the under surface of the frame A, which shaft carries with it the usual power-pulley M², and a central gear, M', which meshes with a gear, D², upon the vertical shaft D'. Power is transmitted through the shaft D' to the pulley D³, belt E⁹, and pul-

ley E⁸, and vertical shaft E', and gear E⁶, and through these to the gear E⁵, shaft E³, and its pulley E⁴, and from these through the medium of the belt F⁷ to the pulley F⁶, the shaft F⁴, the pulley F⁵, and its belt G⁵ to the pulley G⁴, shaft G², apron-pulleys G³, and finally to the endless apron N.

When the carrier-frame is lowered to such a point that the front end thereof would strain the front supporting mechanism, the lower or depending point of its guide-arm K³, of its guide K, will come into contact with and be seated in suitable brackets, K⁴, secured at each side of the rear end of the frame A. In such position the rear end of the carrier-frame G is supported by the vertical swinging frame O, pivoted as at O' to the front of the frame-work A.

Having described my invention and its operation, what I claim is—

1. The combination, with the base A, of the plates B and B' and turn-table C, the frame E, the risers H, the screw-threaded rods H⁴, the blocks H³, the shaft J, spools J', carrier-frame G, pivoted as at F⁴, and having the guides K, riding in said spools, the supports F', pivoted as at E³, and the rope L, substantially as specified.

2. The combination of the frame E, having the risers H, mounted near its rear end and each having the guide H², block H³, and screw-threaded rod H⁴, provided with the gear H⁶, with the transverse shaft J, having the spools J', and shaft H⁸, having the gear H⁷, meshing with the gear H⁶, substantially as specified.

3. The combination, with the risers H and their screw-threaded rods H⁴, blocks H³, mounted on the rods, and shaft J, journaled in the blocks H³ and carrying spools J', of the carrier-frame G, having the depending guides K, bearing in said spools, substantially as specified.

4. The carrier-frame G, having the guides K, formed with the bent portions K', depending therefrom, and the straight braces G³, secured thereto, in combination with the risers H, screw-threaded rods H⁴, blocks H³, mounted on the rods, shaft J, mounted in the blocks H³, and provided with spools J', substantially as specified.

5. The combination, with the base A, having the bars A', and plates B and B', having the turn-table C, mounted between said plates, of the frame E', mounted on said turn-table and carrying the risers H, screw-threaded rods H⁴, shaft J, the latter carrying spools J', blocks H³, the pivoted supports F', and carrier-frame G, having guides K and ropes L, substantially as specified.

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

MARTIN HEINECKE.

Witnesses:

LEON H. HALL,
CHARLES HEINECKE.