

No. 771,648.

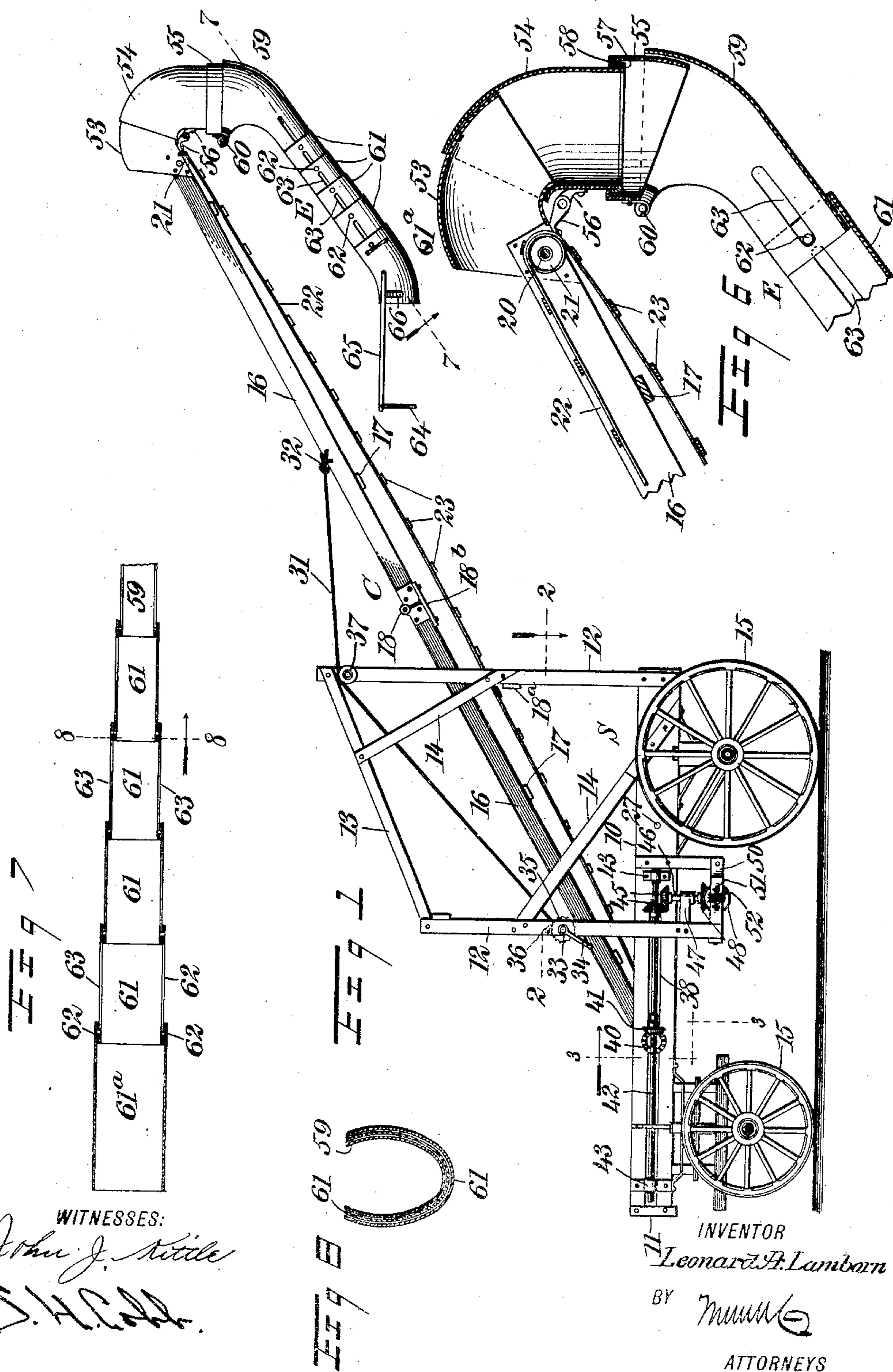
PATENTED OCT. 4, 1904.

L. A. LAMBORN.  
STACKER.

APPLICATION FILED JUNE 4, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



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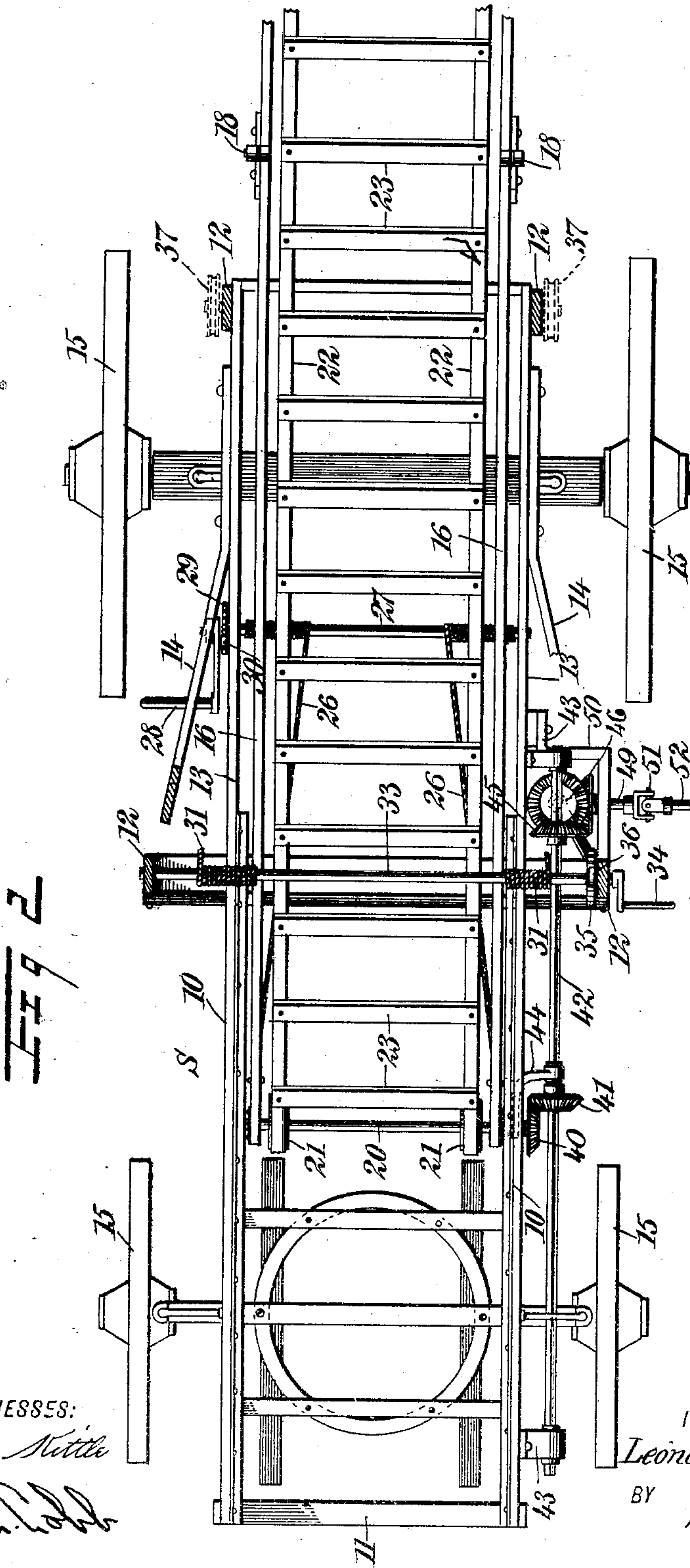
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3 SHEETS—SHEET 2.



WITNESSES:

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No. 771,648.

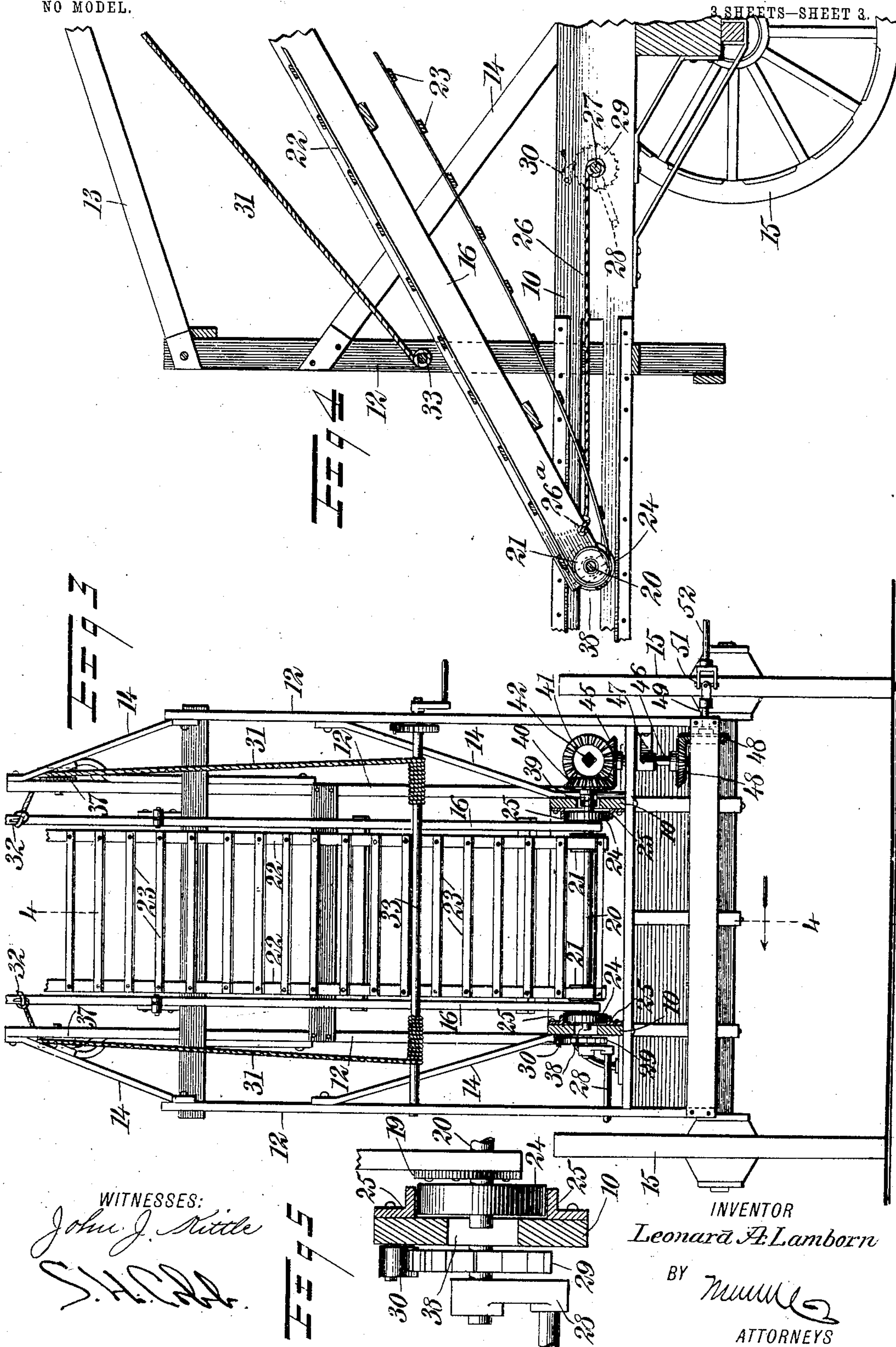
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3 SHEETS—SHEET 3.





# UNITED STATES PATENT OFFICE.

LEONARD A. LAMBORN, OF SCOTTSVILLE, KANSAS.

## STACKER.

SPECIFICATION forming part of Letters Patent No. 771,648, dated October 4, 1904.

Application filed June 4, 1904. Serial No. 211,114. (No model.)

*To all whom it may concern:*

Be it known that I, LEONARD A. LAMBORN, a citizen of the United States, and a resident of Scottsville, in the county of Mitchell and State of Kansas, have invented a new and Improved Stacker, of which the following is a full, clear, and exact description.

My invention relates to a stacking apparatus, and more particularly to that adapted for the handling of bundled grain. Its principal objects are to provide a stacker which will be simple, portable, and effective in operation.

It consists in the various features and combinations 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 figures.

Figure 1 is a side elevation of one embodiment of my invention. Fig. 2 is a horizontal section therethrough on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a partial longitudinal section on the line 4 4 of Fig. 3. Fig. 5 is a sectional detail of the traveling support of the carrier-frame upon the main frame. Fig. 6 is a sectional detail through the upper extremity of the carrier, together with the hood and a portion of the chute leading therefrom. Fig. 7 is a section through the chute on the line 7 7 of Fig. 1, and Fig. 8 is a transverse section on the line 8 8 of Fig. 7.

The letter S designates a main or supporting frame, consisting of horizontal side members 10 10 and connecting end members 11 11. At one extremity of the side members are secured uprights 12, between which extend cross-bars 13, the uprights being braced by diagonal stays 14. The supporting-frame is mounted in any convenient manner upon wagon-wheels 15, enabling the stacker to be readily moved from place to place.

In the supporting-frame is mounted a carrier-frame C, having opposite longitudinal side bars 16 and connecting cross-bars 17. The carrier-frame is preferably formed in sections hinged at 18, enabling the upper extremity to be folded over upon the lower when the apparatus is not in use, both of

these resting upon a bar 18<sup>a</sup>, connecting the two rear uprights. In this position the parts occupy but little more room than the supporting-frame. A plate 18<sup>b</sup> may be separably secured to the adjacent ends of the sections to maintain or lock them in their extended position. Near each end of the side bars 16 are fixed boxes 19, in which are journaled shafts 20, carrying pairs of pulleys 21 21. Over these pulleys operate belts 22, which are connected by suitably-spaced bars 23, these belts and bars furnishing an elevator or carrier. Upon the lower carrier-shaft are rotatably mounted rolls 24 24, each of these rolls operating in a way formed upon the inner side of one of the members 10 by angle-irons 25 secured thereto.

The carrier-frame may be retained in position at its lower end by ropes or flexible members 26, secured to one end of the side bars at 26<sup>a</sup> and at the opposite end to a shaft 27, journaled in the members 10 and provided with a crank 28, by which it may be rotated. The shaft may be retained in position to fix the lower end of the carrier-frame by a ratchet 29, fast upon the shaft and engaged by a spring-actuated pawl 30, pivoted upon the adjacent member 10. The upper end of the carrier-frame is shown as supported by ropes or flexible members 31. These are connected at 32 to the upper section and have their lower ends secured to a shaft 33, journaled in the forward pair of uprights of the supporting-frame. This shaft 33 may be rotated to vary the effective length of the rope by a crank 34 and may be fixed in position by a ratchet and pawl 36, similar to those previously described. At an intermediate point each of the members 31 passes over a roll 37, rotatably mounted upon one of the rear uprights.

The ends of the shaft 20 move in slots 38 in the members 10, and one extremity of this shaft at 39 extends through the slot and is provided with a bevel-gear 40, fast thereon. This gear meshes with a bevel-gear 41, which is rotatable with and movable along a squared shaft 42, journaled in bearings 43 upon the outside of one of the members 10. To maintain the gears 40 and 41 consequently in mesh,



their hubs may be connected by an angular bracket 44, in which they rotate. The shaft 42 is preferably connected by bevel-gearing 45 with a vertical shaft 46, journaled in a bracket 47, fixed to a depending end of one of the uprights of the supporting-frame, and this shaft 46 may be connected by bevel-gearing 48 with a shaft 49, rotatable in a frame 50, connecting the end of the upright extension and the member 10. The shaft 49 may be coupled by a universal joint 51 with a shaft 52, connected with any suitable source of power.

To the upper end of the carrier-frame is secured a hood, here shown as consisting of three sections 53, 54, and 55. The first of these sections is attached to the opposite side bars, while the second is hinged thereto by arms 56, so that it will swing or telescope over the first section. Upon the lower extremity of the section 54 is secured a collar 57, while the section 55 is provided with an overhanging flange at 58, resting upon the upper edge of this collar, thus providing for the rotation of the lower section upon that above it. Below the hood is an extension or chute E, the upper section 59 of which is hinged at 60 to the hood-section 55. Below this section 59 is a series of telescoping sections 61, which, as here illustrated, are connected with one another by pins 62, situated at the opposite sides of the upper ends of the sections and projecting through slots 63 in the lower ends of the adjacent sections. The last section, 61<sup>a</sup>, is preferably curved to deliver horizontally and carries a deflector 64, situated at some distance from the end of the section to permit the delivery of a bundle, this section being conveniently supported upon arms 65, fixed to the section 61<sup>a</sup> by brackets 66.

In the use of my improved stacker it is drawn to the point where it is desired to erect the stack and the upper sections of the carrier-frame raised and supported by the members 31, the lower end of the frame being at the forward extremity of the ways, so that the carrier-frame is at its minimum angle, bringing the lower sections of the chute close to the ground. Power is now applied to the shaft 52, causing the upper run of the carrier to move toward the hood. The bundles of grain are now thrown upon the carrier, which moves them up into the hood, through which they fall and descending the chute strike upon the deflector and fall to the ground. An attendant at the lower end of the chute controls its position by either swinging it in a vertical plane by means of the hinged sections, rotating it about a vertical axis by virtue of the swivel connection between the sections 54 and 55, or varying its length through the telescoping of the chute-sections. This enables him to deposit the bundles at any desired point. As the stack increases in height the angle of the carrier-frame is increased

by rotating the shaft 27 through its crank, this resulting in the ropes 26 drawing the lower carrier-shaft rearwardly in its ways. As this occurs the ropes 31 travel over the rolls and permit the variation in angularity, or, if desired, the inclination of the carrier-frame may be varied to a certain extent by altering the length of the supporting-ropes 31 through the shaft 33. This may continue until the lower carrier-shaft has reached the rear end of the ways and the chute-sections have been completely closed over one another.

It will be seen that the apparatus may be successfully operated by one attendant at the power mechanism, this person also varying the inclination of the carrier-frame, and another to manipulate the chute.

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

1. A stacker comprising a supporting-frame, a carrier-frame having its lower end mounted to slide upon the supporting-frame, a carrier operating in the carrier-frame, and a flexible member connecting the supporting-frame carrier-frame, and means for sliding the carrier-frame upon the supporting-frame to vary the angle of the carrier.

2. A stacker comprising a supporting-frame, a carrier-frame having its lower end mounted to slide upon the supporting-frame, a carrier operating in the carrier-frame, and a flexible member connecting the supporting-frame and carrier-frame movable over the supporting-frame at an intermediate point, and means for sliding the carrier-frame upon the supporting-frame to vary the angle of the carrier.

3. A stacker comprising a supporting-frame, a carrier-frame having its lower end mounted to slide upon the supporting-frame, a carrier operating in the carrier-frame, a flexible member connecting the supporting-frame and carrier-frame and movable over the supporting-frame at an intermediate point, and a second flexible member connecting the supporting-frame with the carrier-frame near its lower end.

4. A stacker comprising a supporting-frame, a carrier-frame having its lower end mounted to slide upon the supporting-frame, a carrier operating in the carrier-frame, means for movably supporting the upper end of the carrier-frame, and means connected with the lower end of the carrier-frame for sliding it upon the supporting-frame.

5. A stacker comprising a supporting-frame, a carrier-frame having lower and upper hinged sections and being mounted with its lower section sliding upon the supporting-frame, a carrier operating in the carrier-frame, means for movably supporting the carrier-frame connected to its upper section, and means connected with the lower section for sliding it upon the supporting-frame.

6. A stacker comprising a supporting-



frame, a carrier-frame having lower and upper hinged sections and being mounted with its lower section sliding upon the supporting-frame, and a lock between the carrier-frame sections situated adjacent to the hinge.

7. A stacker comprising a supporting-frame provided with ways, a carrier-frame, shafts journaled near opposite ends of the carrier-frame, a carrier operating over the shafts, rolls mounted upon the lower carrier-shaft and coacting with the ways, a gear fixed to the carrier-shaft, a shaft journaled in the supporting-frame, driving means for said shaft, a gear movable along the latter shaft and meshing with that upon the carrier-shaft.

8. A stacker comprising a carrier-frame, a carrier operating therein, a hood mounted at the end of the carrier, an extension from the hood having telescoping sections, and a de-

flector mounted upon the outer section at some distance from the end thereof.

9. A stacker comprising a carrier-frame, a carrier operating therein, a hood mounted at the end of the carrier and formed in hinged sections, and an extension from the hood having telescoping sections.

10. A stacker comprising a carrier-frame, a carrier operating therein, a hood mounted at the end of the carrier, and an extension from the hood having telescoping sections rotatable about said hood and hinged thereto.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEONARD A. LAMBORN.

Witnesses:

JOHN A. HUNTER,  
JOHN E. SQUIRE.