

No. 675,624.

Patented June 4, 1901.

W. G. DANIELSEN.
HAY STACKER.

(Application filed Dec. 31, 1900.)

(No Model.)

3 Sheets—Sheet 1.

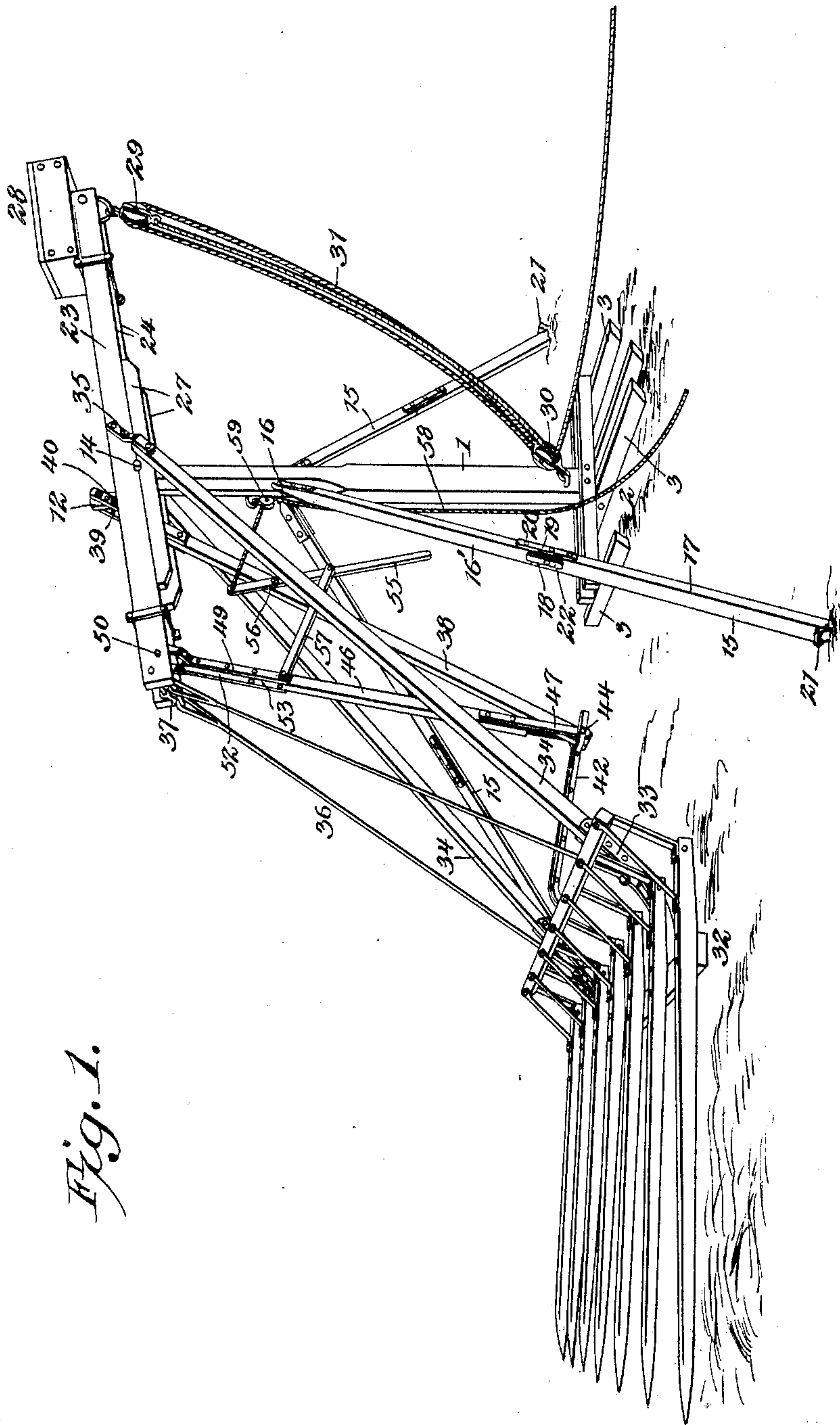


Fig. 1.

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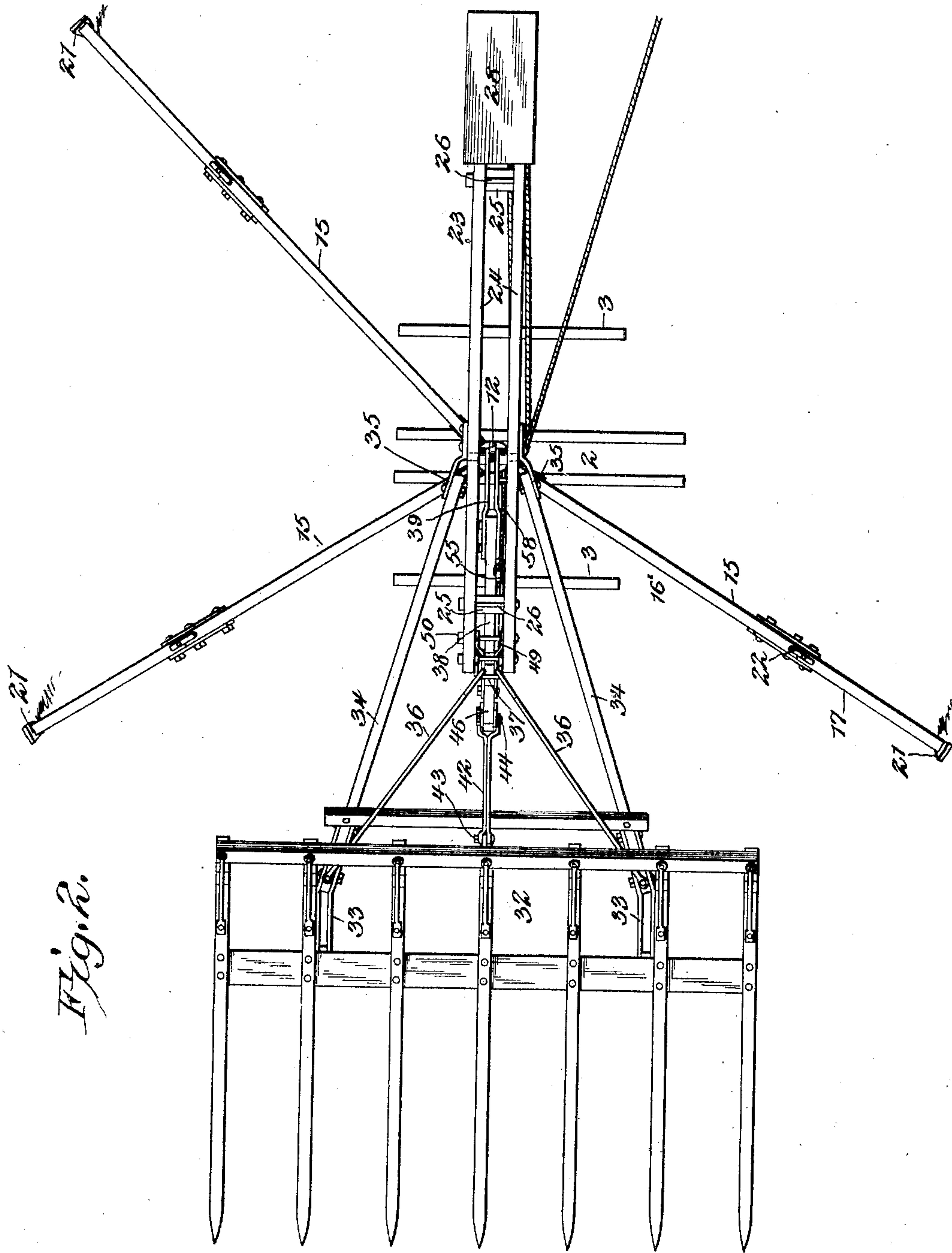


Fig. 2.

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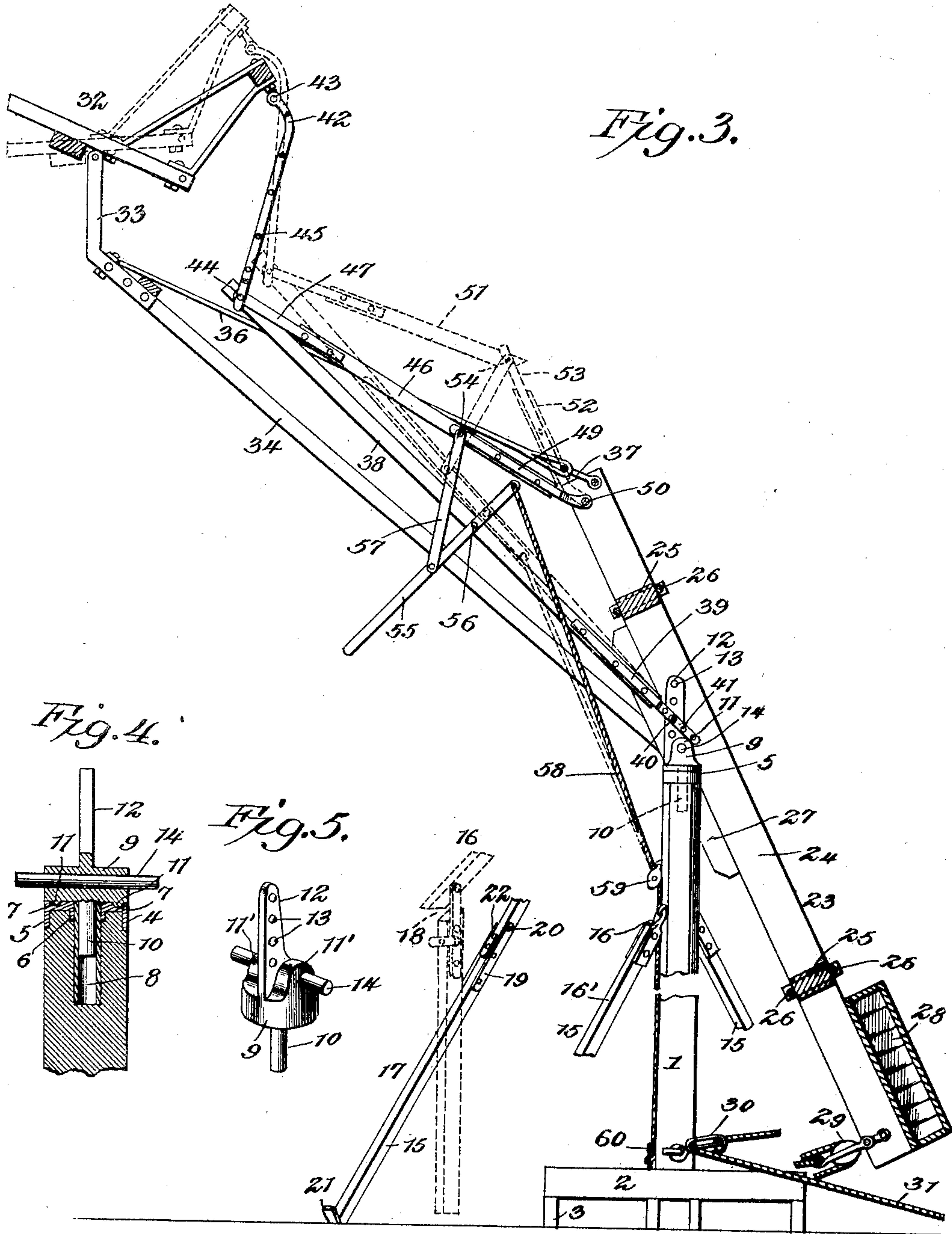
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WILHELM G. DANIELSEN, OF LOGAN, UTAH.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 675,624, dated June 4, 1901.

Application filed December 31, 1900. Serial No. 41,719. (No model.)

To all whom it may concern:

Be it known that I, WILHELM G. DANIELSEN, a citizen of the United States, residing at Logan, in the county of Cache and State of Utah, have invented a new and useful Hay-Stacker, of which the following is a specification.

My invention is an improved hay-stacker; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a hay-stacker embodying my improvements, showing the fork lowered to the ground in position to be loaded. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation, partly in section, of the same, showing the fork in an elevated position and disposed in a tilted position in dotted lines. Fig. 4 is a detail sectional view of the upper end of the post, the bushing therein, the cap thereon, and the turn-table. Fig. 5 is a detail perspective view of the turn-table.

In the embodiment of my invention I provide a post 1, which is supported on a frame 2, that is provided with runners 3, whereby the machine may be readily moved from place to place. A metallic cap 4 is secured on the upper end of the post, has a depending flange 5, that encircles the same, a central annular depending flange 6, which extends in an opening in the upper end of the post, and the said cap is further provided with an annular guide-groove 7 on its upper side and concentric thereon. A bushing 8, which is of cylindrical form and is preferably made of a piece of metallic pipe of suitable length and diameter, is secured in the vertical opening in the upper end of the post.

A turn-table 9, which is preferably made of cast metal, is provided with a depending shank 10, which engages the bushing 8. The said turn-table is provided on its lower side with a circular depending flange 11, which operates in the guide-groove 7 of the cap. The said turn-table is formed with a pair of lugs or ears 11' on its upper side and with a standard 12, the latter being provided with a series of adjusting-openings 13. Trunnions 14 project from the outer sides of the lugs or ears 11'.

To prevent the machine from overturning when in operation, I provide a series of prop-bars 15, which are radially disposed with reference to the post 1 when the machine is in operation and have their upper ends pivotally connected thereto, as at 16. Each of the said prop-bars comprises a pair of sections 16' 17, the meeting ends of which are beveled, as shown at 18. Each section 17 is provided on opposite sides with a pair of metallic straps 19, which are bolted thereto and form extensions of the upper end thereof. The lower portion of the section 16' is pivotally bolted between the upper ends of said straps, as at 20. Thereby each of the prop-bars is provided with a hinged joint. In operation in setting the machine the outer ends of the prop-bars are either partially buried in the earth or are disposed against pegs 21, driven in the earth, as indicated in the drawings, the hinge-joints of the prop-bars facilitating the setting of the same and said prop-bars when the same are extended in right lines serving to effectually brace the post 1, as will be understood. Each of the prop-bars is provided with a button 22, which is pivoted on the upper side of the lower section 17 and which when turned so as to cover the joint between the sections of the prop-bar thereby locks the same rigidly in position when extended in a right line.

The sweep-lever 23 is fulcrumed on the trunnions 14 of the turn-table and comprises a pair of parallel bars 24, spaced apart a suitable distance by blocks 25, clamped on the ends of said blocks by clip-bolts 26 and braced on their lower sides at their fulcrum-points by truss-bars 27. The sweep-lever may, however, be of any other preferred construction. On the outer end of the sweep-lever is a weight-box 28, which is adapted to hold sand, stones, or other suitable heavy material. A block 29 is attached to the outer end of the sweep-lever. A block 30 is attached to the post 1 near the lower end thereof, and a hoisting-rope 31 connects the said blocks and is operated by a horse attached thereto in the usual manner.

The fork-head 32 is pivotally connected to metallic arms 33, which form extensions of a pair of bars 34. The upper ends of said bars are connected to the sweep-lever, as at

35, at a point near the fulcrum thereof. A pair of link-rods 36 are connected to a clevis 37, which is at the inner end of the sweep-lever, the opposite ends of said link-rod being
 5 bolted to the outer ends of the bars 34, the latter and the link-rods constituting an arm or frame which projects from the sweep-lever and to which the fork-head is pivotally attached. Thereby the fork-head is adapted
 10 to be tilted to any required position with relation to the said arm or frame.

An adjusting-bar 38 is provided at one end with a pair of metallic straps 39, which are bolted on opposite sides thereof and form a
 15 forked extension thereof. The said straps at their outer ends are disposed on opposite sides of the standard 12 of the turn-table and are pivoted thereto by a bolt 40, which engages one of the adjusting-openings 13 of said
 20 standard and appropriate adjusting-openings 41, with which said straps are provided. The fork-head is connected to the free end of said adjusting-bar by a link 42, which is pivotally
 25 pivotally connected to the adjusting-bar by a bolt 44. Said link is provided with a series of adjusting-openings 45, by means of which the adjusting-bar may be pivotally connected
 30 thereto at any point. A tilting bar 46 connects the adjusting-bar and link 42 with the sweep-lever at a point near the inner end thereof, the outer end of said tilting bar being
 35 provided with a pair of metallic straps 47, which are bolted on opposite sides thereof, form a forked extension thereof, and are provided with openings for the bolt 44, and the inner end of said tilting bar is provided
 40 with a similar pair of metallic straps 49, which engage a pivotal bolt 50, that extends through the inner end of the sweep-lever. The tilting
 45 bar 46 is composed of an outer section 51 and an inner section 52, the meeting ends thereof being beveled, as at 53, the section 52 being rigidly bolted to the straps 49 and the
 50 outer section 51 being pivoted between said straps by a bolt 54. Thereby the said tilting lever is provided with a hinge-joint. It will be understood that when the said jointed portion
 55 of said tilting bar is raised to shorten the distance between the ends of said bar the same being connected to the fork-head by the link 42 turns the fork-head to a tilted position, depressing the bars or fingers thereof and causing the fork-head to be discharged
 60 by gravity of its load. When the said hinge-joint of said tilting bar is lowered to lengthen the distance between the ends of said bar, the outer ends of the bars or fingers of the fork-head are elevated, as will be understood.

60 In order to operate the tilting bar, I provide a tilting lever 55, which is fulcrumed to the adjusting-bar, as at 56, and is connected to the hinge-joint of the tilting bar by a link 57. The upper end of said tilting lever is
 65 connected to the post 1 by a trip-rope 58, which engages a block 59 on said post and is

connected to the post and adapted to be adjusted thereon by a cleat 60.

From the foregoing it will be understood that when the fork is raised to a certain position, predetermined by adjusting the trip-rope
 70 58, and hence adjusting the adjusting-bar 38, the tilting lever as the adjusting-bar continues to ascend by drawing downward or arresting the ascent of the upper end of the
 75 tilting lever 55 causes the latter, through the link 57, to move the hinge-joint of the tilting bar 51 upward, thereby tripping the fork-head and causing the same to be discharged
 80 of its load, as hereinbefore stated. This position of the tilting bar, tilting lever, and fork-head is indicated in dotted lines in Fig. 3. It will be further understood that inasmuch as the outer end of the adjusting-bar 38 may be
 85 pivotally connected to the link 42 at any desired point intermediate of the ends of the latter the fork-head may be adjusted and caused to lie at any desired angle while ascending. This is of importance in order to
 90 counteract the action of the wind, which under certain conditions might blow away some of the hay or straw while the same is being elevated by the fork.

It will be understood that the fork-head and its connections are counterpoised by the
 95 weight-box on the sweep-lever and that thereby only a minimum expenditure of power is required in the operation of the machine to elevate the loaded fork-head.

A hay-stacker thus constructed is extremely
 100 cheap and simple, is portable, and is thoroughly efficient in operation.

I do not desire to limit myself to the precise construction and combination of devices
 105 herein shown and described, as modifications may be made therein without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. In a hay-stacker, the combination of a
 110 post, a sweep-lever mounted thereon and having an extended arm or frame at one end, a fork-head pivotally mounted on said extended arm or frame, a link connected to said fork-head, an adjusting-bar having one end pivotally
 115 connected to said link, said adjusting-bar being pivotally connected also to a fixed point, a tilting bar having a hinge-joint and connecting said adjusting-bar to the said sweep-lever and a tilting lever connected to
 120 said tilting bar, for the purpose set forth, substantially as described.

2. In a hay-stacker, the combination of a
 125 post, a sweep-lever mounted thereon, and having an extended arm or frame at one end, a fork-head pivotally mounted on said extended arm or frame, an adjusting-bar having one end pivotally connected to a fixed point, a link connecting the free end of said adjusting-bar to said fork-head, said adjusting-bar
 130 being adjustably connected to said link, a tilting bar having a hinge-joint and connect-

ing said adjusting-bar to said sweep-lever, and means to operate said tilting bar, substantially as described.

3. In a hay-stacker, the combination of a
 5 post, a sweep-lever mounted thereon and having an extended arm or frame at one end, a fork-head pivotally mounted on said extended arm or frame, a link connected to said fork-head, an adjusting-bar having one end pivotally
 10 ally connected to said link, said adjusting-bar being pivotally connected also to a fixed point, a tilting bar having a hinge-joint and connecting said adjusting-bar to the said sweep-lever, a tilting lever fulcrumed on said
 15 adjusting-bar, and connected to said tilting bar, and a trip-rope attached to the said tilting lever, substantially as described.

4. In a hay-stacker, the combination of a
 20 post, a cap thereon, a turn-table having a depending stud bearing in an opening in the upper end of said post, said turn-table being further provided with a standard, a fork-head, a sweep-lever fulcrumed on said turn-table, and having an extended arm or frame

to which said fork-head is pivotally connected, 25
 a link attached to said fork-head, an adjusting-bar attached to said link, said adjusting-bar being pivotally connected to and adjustable on the standard of said turn-table, a
 30 hinged tilting bar connecting said adjusting-bar to said sweep-lever, and means to operate said tilting bar, substantially as described.

5. In a hay-stacker, the combination of a support, a sweep-lever mounted thereon, a pivotally-mounted fork-head carried by said
 35 sweep-lever, a link connected to said fork-head, a tilting bar connecting said link and sweep-lever, and having a hinge-joint, and means to operate said tilting bar, substantially as described. 40

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILHELM G. DANIELSEN.

Witnesses:

DAVID ROBBINS,
 C. E. LLOYD.