

No. 849,796.

PATENTED APR. 9, 1907.

F. A. KIME.
HAY STACKER.

APPLICATION FILED FEB. 13, 1906.

2 SHEETS—SHEET 1.

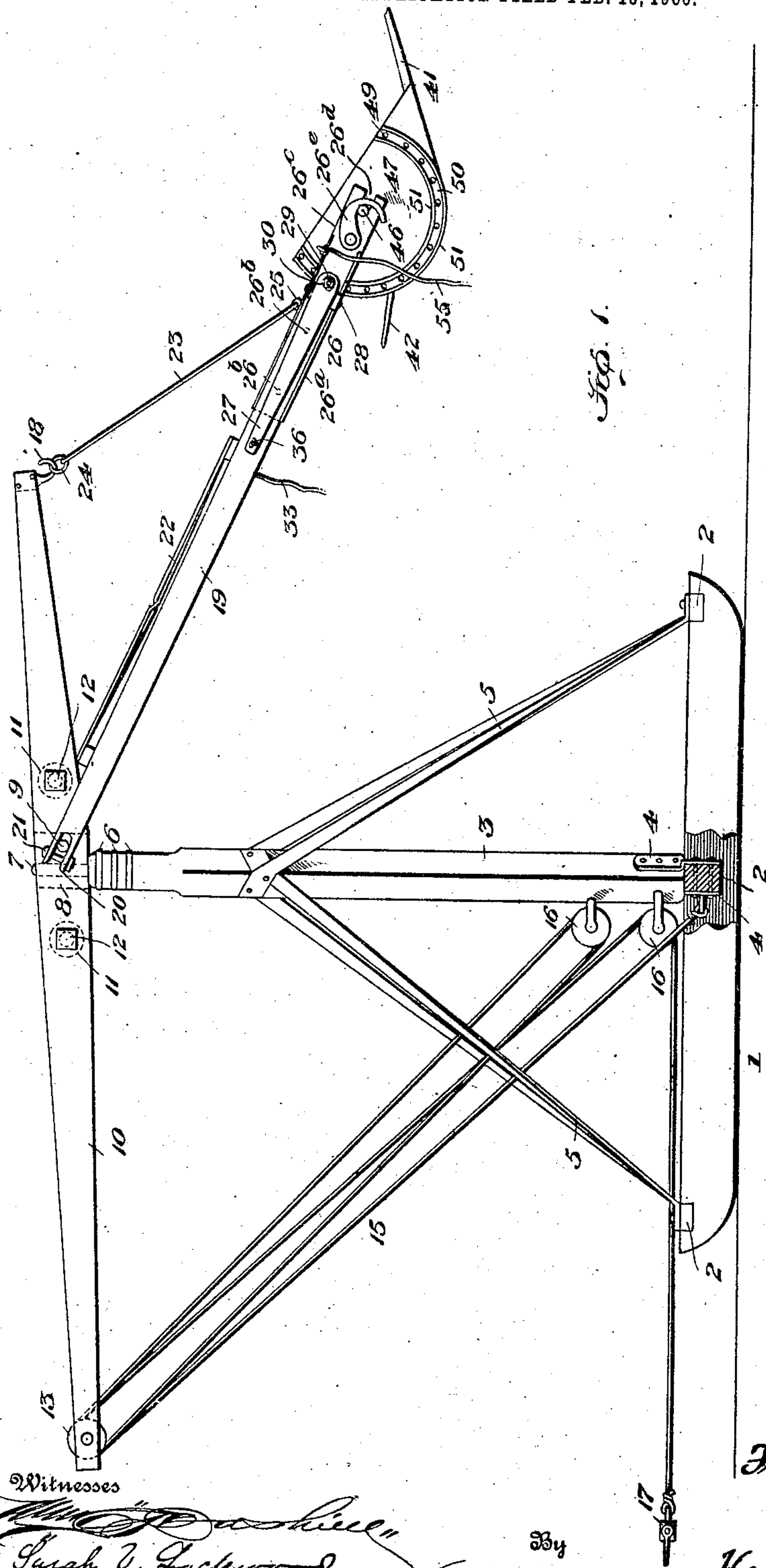


Fig. 1.

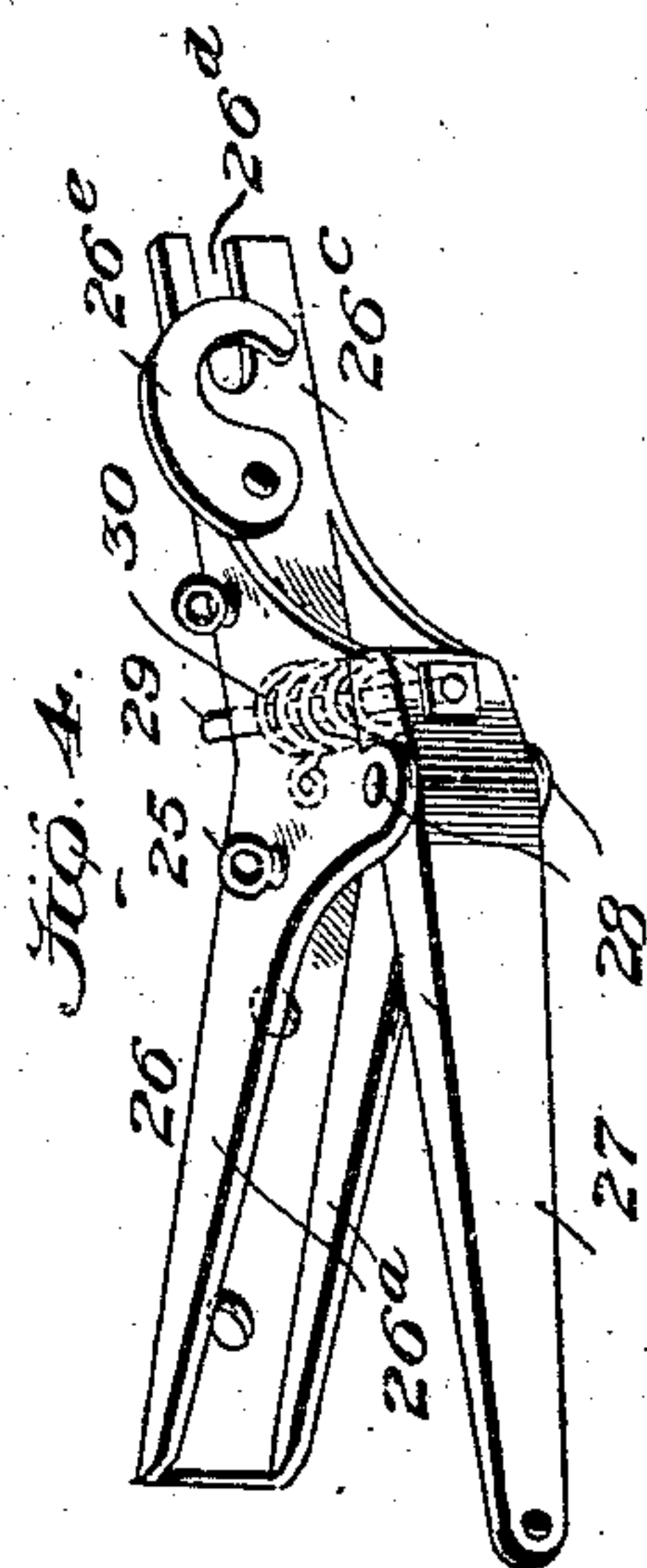


Fig. 4.

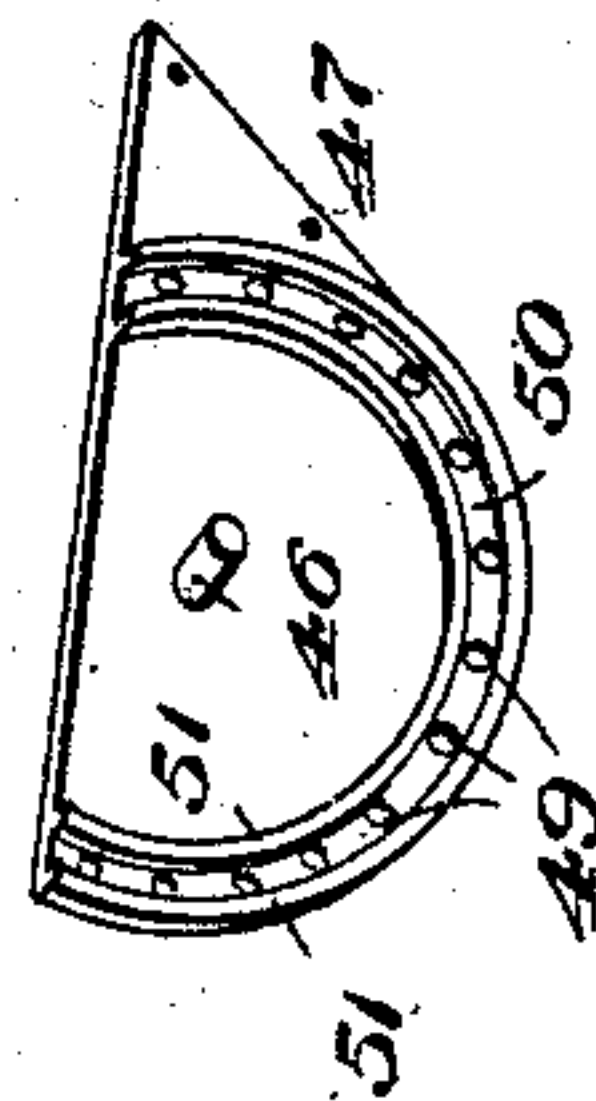


Fig. 5.

Witnesses

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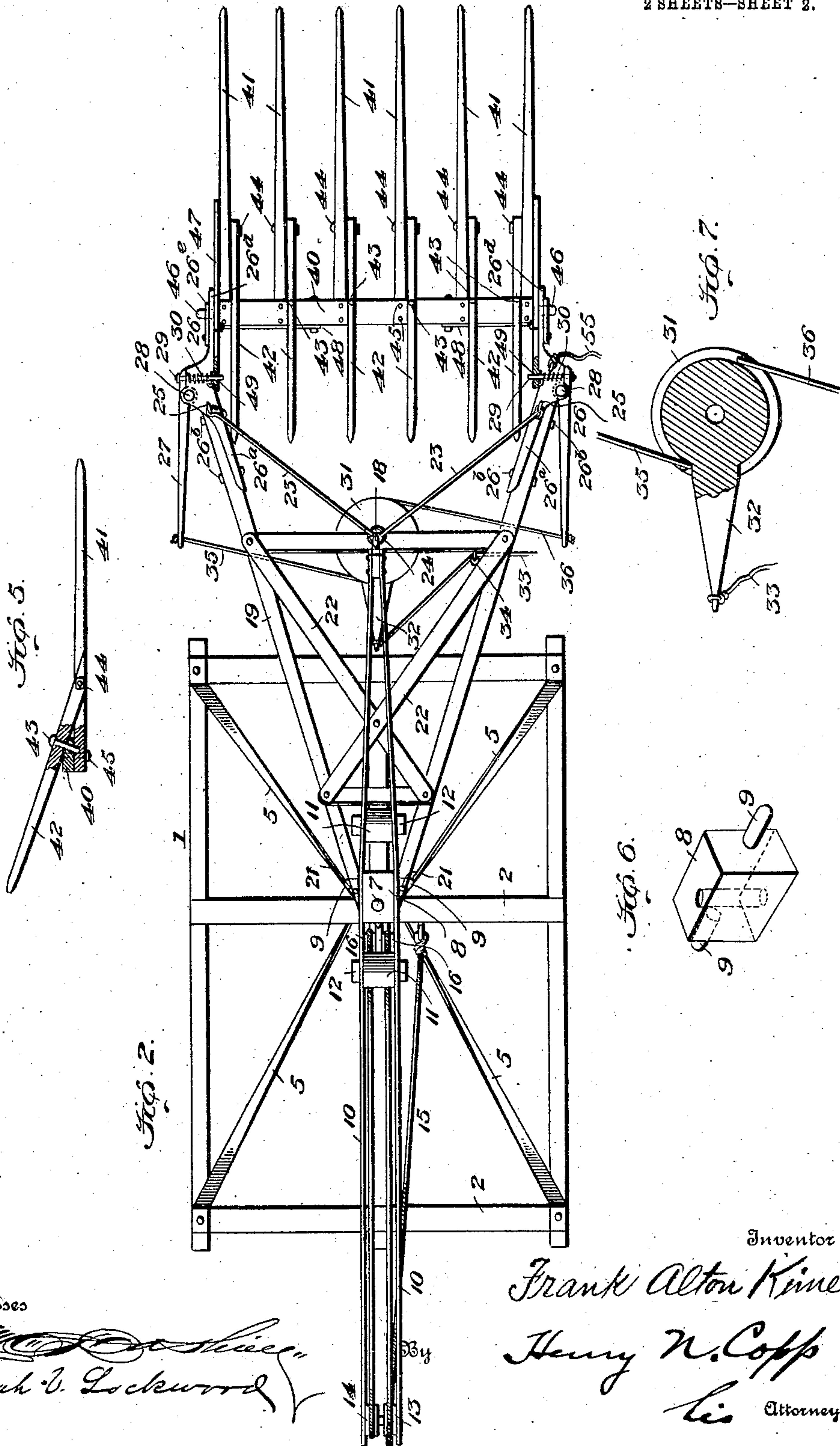
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE

FRANK ALTON KIME, OF WESTFALL, OREGON.

HAY-STACKER.

No. 849,796.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed February 13, 1906. Serial No. 300,894.

To all whom it may concern:

Be it known that I, FRANK ALTON KIME, a citizen of the United States, residing at Westfall, county of Malheur, and State of Oregon, have invented certain new and useful Improvements in Hay-Stackers, of which the following is a specification.

This invention relates to hay-stackers.

The object of my invention is to provide improvements on the hay-stacker disclosed in my United States Letters Patent No. 807,471, dated December 19, 1905, and it contemplates the provision of an improved walking-beam and means for pivoting it to the mast, so that the mast may be rigidly braced from the sled; an improved fork construction, whereby the hay may be placed on the fork in such a way that the fork is more or less balanced; improved fork ends which insure reliability of the latching of the fork in its different positions and lightness of construction; novel means for simultaneously actuating the latching-pins; improved and novel supporting means on the derrick-arms, whereby the fork can be rapidly and easily connected thereto or removed therefrom, together with improved means for bracing the various parts and detachably connecting them so that the stacker may be readily taken apart at different points without disturbing other parts or members thereof, and by which the entire stacker may be rapidly and easily taken down and packed for transportation or assembled for operation.

Having the foregoing objects in view the invention embraces certain improved features and novel combinations and adaptations of parts set forth fully hereinafter and recited in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation; Fig. 2, a plan view; Fig. 3, a detail of one of the fork end plates; Fig. 4, a perspective detail of the construction of the fork supporting and latching means on one member of the derrick-arms; Fig. 5, a detail section showing the construction of the fork; Fig. 6, a detail of the connection between the walking-beam and the mast; and Fig. 7 a detail of the arm and sheave for simultaneously operating the locking-pins.

The sled 1 is preferably constructed of side and intermediate members connected by cross-braces 2, on the central one of which the mast 3 is supported, and connected there-

to by the braces or irons 4. Braces 5 connect the mast to the corners of the sled.

Bands 6 encircle the upper end of mast 3, and there is a gudgeon 7, which projects from the upper end of the mast. A casting 8 is pivoted on said gudgeon 7 to swing in a horizontal plane, and this casting has horizontal trunnions 9, which pass loosely through the side pieces 10 of the walking-beam, said side pieces being separated by sleeves 11, surrounding bolts 12. At the rear end of the walking-beam are the two sheaves 13 and 14, around which the pull-rope 15 passes, and this pull-rope also passes around sheaves 16 on the mast 3 and has connected thereto a swingletree 17, so that a horse may be employed in operating the stacker. Secured to the front end of the walking-beam is a hook 18.

The derrick-arm is composed of converging members 19, which have slotted ends straddling the projecting ends of the trunnions 9 and held by bolts 21, said arms lying on opposite sides of the walking-beam. This construction permits rapid and easy attachment to or removal of the derrick-arms. The derrick-arms 19 are braced by the braces 22, and the rods 23, which are attached to a ring 24, engage with the hook 18, have their lower ends connected to eyes 25 on the respective derrick-arms. By this means the derrick-arms are supported from the walking-beam.

Secured to the free ends of the derrick-arms are improved hay-fork holders 26, which consist of castings having bracing portions 26^a, connected to the derrick-arms 19 by bolts 26^b, said bracing portions being adapted to embrace the derrick-arms, and projecting portions 26^c, having slotted ends 26^d, in which the axle of the hay-fork is held by the swinging retainers or latches 26^e. The hay-fork holders 26 are provided with ears, to which levers 27 are pivoted at 28. Secured to the levers 27 are latching-pins 29, encircled by springs 30, which tend to keep the latches projected in position to engage the hay-fork.

Journaled to the derrick-arms is a sheave 31, which has an arm 32, to which the releasing-rope 33 is connected, said rope running over the pulley 34 on the derrick-arms. Ropes 35 and 36 are connected to the releasing-levers 27 and are fastened to the sheave 31 diametrically opposite to each

other and are adapted to wind into the groove in the sheave. The arrangement is such that on pulling the rope 33 ropes 35 and 36 are wound upon the sheave 31 and the levers 27 are simultaneously drawn toward the derrick-arms 19, thereby simultaneously retracting the latching-pins 29, and thus releasing the hay-fork.

In the hay-stacker set forth in my Patent No. 807,471 the latching-pins are independently withdrawn by separate pull-ropes, which is inconvenient and sometimes prevents the two latching-pins from entering the openings in the ends of the hay-fork on release of said latching-pins. With the present invention absolute reliability of action in latching and unlatching the hay-fork is obtained.

The hay-fork has a beam 40, front teeth or tines 41, and rear teeth or tines 42, the tines 42 resting upon the beam 40 and secured thereto by the fastenings 43, the forward ends of the tines 42 being bolted to the tines 41 at 44, said tines 41 being secured to the under side of the beam 40 at 45. By this construction the tines 42 brace the tines 41, and by having the tines 42 slanting the hay may be placed on the fork in such a manner that it balances the fork, said fork having the axle ends 46, which are journaled in the slots 26^d. Secured to the ends of the fork are the latching-plates 47, which are connected to the beam 40 by braces 48. These latching-plates are of improved construction over those set forth in my patent before referred to in that they are lighter and have less material, and the openings 49 extend in only a portion of a circle instead of in a complete circle, as disclosed in my patent, while these openings lie in the bottom of a track 50, which is formed by concentric flanges 51, cast on the outside of the end plates 47. These flanges receive the latching-pins 29 between them and prevent any injury to the latching-pins, while they also insure positioning of said pins, so that they necessarily must enter the openings.

In using the stacker the rope 15 is manipulated to allow the fork to rest on the ground with the teeth or tines 41 lying flat. The operator then pushes the hay upon the teeth and into the fork, and as the walking-beam 10 is raised by the horses pulling on the rope 15 the derrick-arms and fork also rise, the weight of the hay balancing the fork, as before set forth. A pull-rope 55 is employed to guide the fork in its movement over the stack. When the fork is in the desired position, the releasing-rope 33 is pulled, thereby simultaneously withdrawing the latching-pins 29 from the openings 49, which have been previously engaged by them, and the fork may then be dumped.

The general operation of the stacker is in other respects similar to that of my stacker set forth in my Patent No. 807,471, previously referred to.

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

1. In a hay-stacker, the combination with a supporting member, of a hay-fork pivotally and tiltably connected to said supporting member, latches carried on the supporting member adapted to engage different portions of the hay-fork to hold it in different tilted positions, means for simultaneously operating said latches comprising an operating member mounted on the supporting member aforesaid, and means connecting the latches to the operating member so that they will be simultaneously operated therefrom.

2. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, latches adapted to engage different portions of the hay-fork, means for simultaneously operating said latches comprising a sheave, means for turning the sheave, and cables operably connected to the latches and adapted to wind on the sheave.

3. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, latches adapted to engage different portions of the hay-fork, means for simultaneously operating said latches comprising a sheave, means for turning the sheave, and cables connected to said sheave at diametrically opposite points and adapted to wind thereon, whereby the latches are simultaneously operated.

4. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, spring-actuated levers pivoted to said supporting member, latching-pins connected to the levers and adapted to engage different portions of the hay-fork, and means for simultaneously operating said levers to simultaneously operate the latching-pins.

5. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting members, spring-actuated levers pivoted to said supporting member, latching-pins connected to the levers and adapted to engage different portions of the hay-fork, means for simultaneously operating said levers to simultaneously operate the latching-pins, said operating means comprising a rotary sheave, means for turning the sheave, and cables connected to the levers and connected to the sheave and adapted to wind thereon.

6. In a hay-stacker, the combination with a supporting member having slotted bearings, of a hay-fork having axles removably

received in the said slotted bearings, and latches or retainers for holding the axles in the slotted bearings.

5 7. In a hay-stacker, a hay-fork comprising a beam extending longitudinally thereof, teeth or tines secured to the under side of the beam, and teeth or tines resting on and secured to the beam and also secured to the tines or teeth first mentioned.

10 8. In a hay-stacker, a tiltably-mounted hay-fork having latching-plates, braces connecting the latching-plates to the fork, and latches adapted to engage the latching-plates aforesaid.

15 9. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably mounted thereon which has latching-plates provided with trackways arranged in the arc of a circle in relation to the pivotal points of
20 the hay-fork, and latching-pins on the sup-

porting member which are received in the trackways aforesaid and adapted to engage with the latching-plates aforesaid.

10. In a hay-stacker, the combination with a supporting member, of a hay-fork 25 tiltably mounted thereon which has latching-plates provided with trackways arranged in the arc of a circle in relation to the pivotal points of the hay-fork, said plates also having latching-pin openings in said trackways, 30 and latching-pins on the supporting member which are received in the trackways and adapted to engage the openings aforesaid to lock the hay-fork in different tilted positions.

In testimony whereof I hereunto affix my 35 signature in presence of two witnesses.

FRANK ALTON KIME.

Witnesses:

J. D. FAHY,

J. M. HOWARD.