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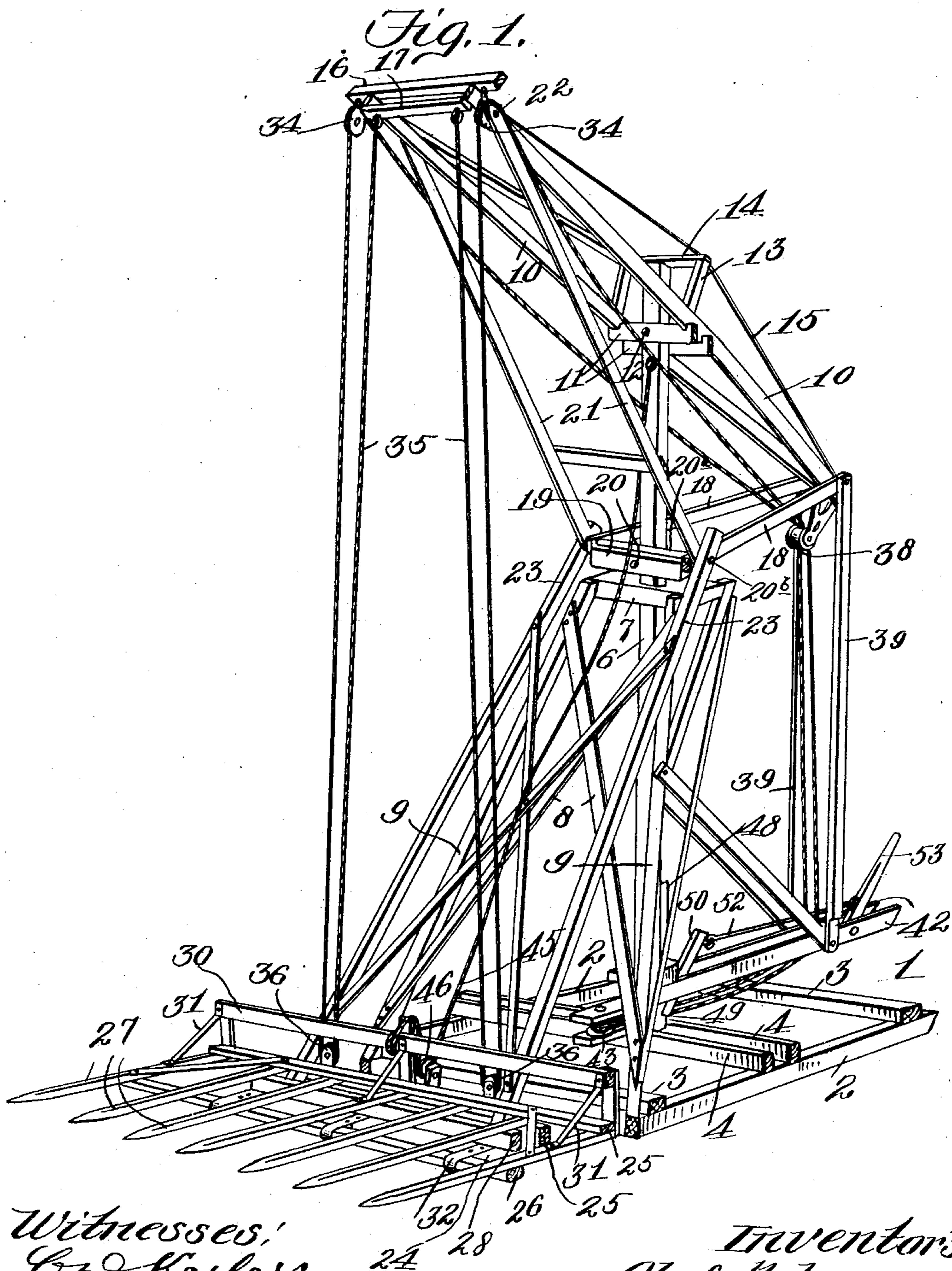
O. & L. NELSON.

HAY STACKER.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

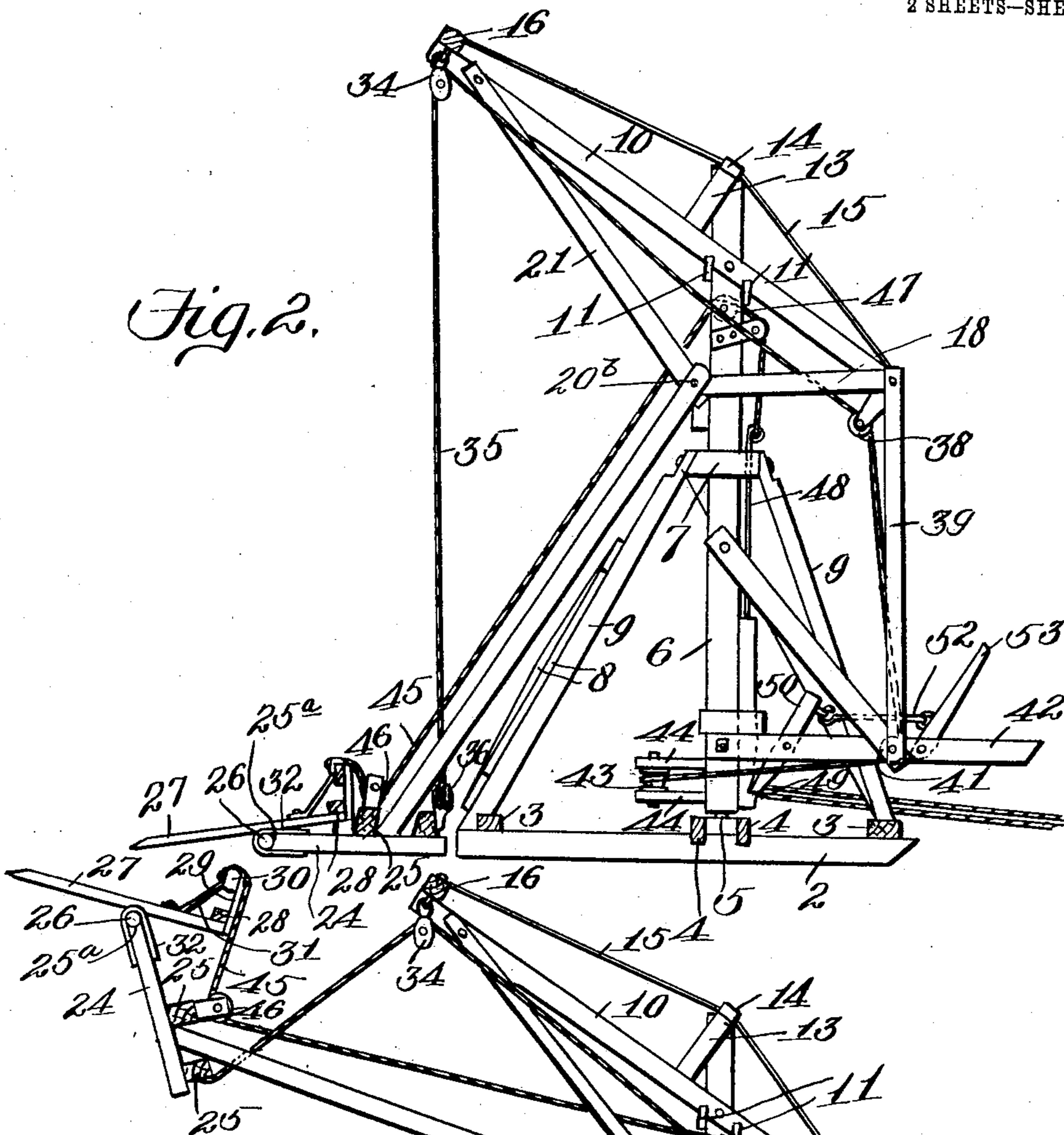
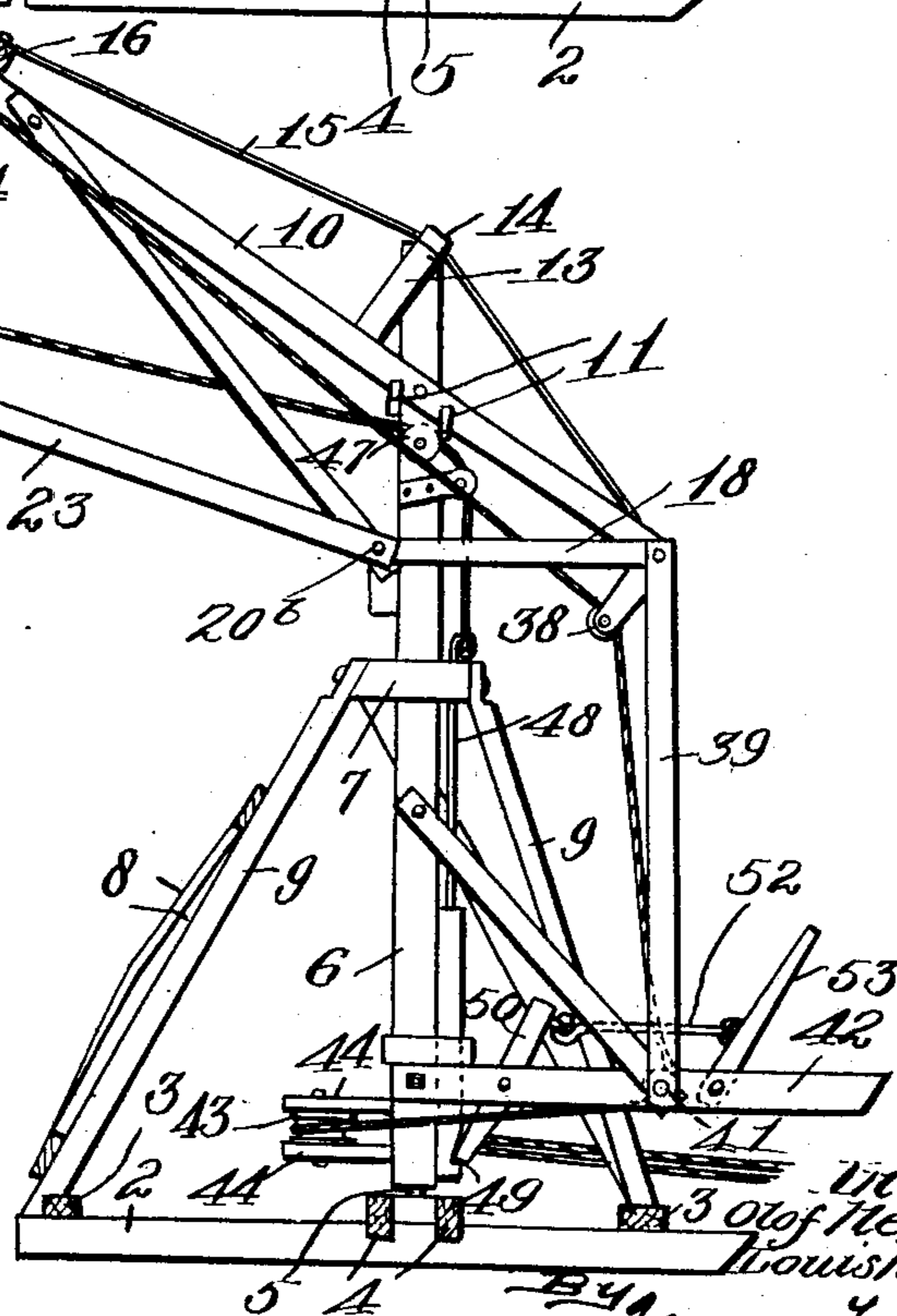


Fig. 3.



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UNITED STATES PATENT OFFICE.

OLOF NELSON AND LOUIS NELSON, OF SHERIDAN, WYOMING.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 771,658, dated October 4, 1904.

Application filed October 22, 1903. Serial No. 178,120. (No model.)

To all whom it may concern:

Be it known that we, OLOF NELSON and LOUIS NELSON, citizens of the United States, residing at Sheridan, in the county of Sheridan and State of Wyoming, have invented new and useful Improvements in Hay-Stackers, of which the following is a specification.

This invention relates to hay-stackers, and has for its object to provide a simple, efficient, and economically-operated device of the character referred to by means of which hay may be elevated from the ground and deposited in successive charges at any desired point to form a rick or stack.

To this end our invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a perspective view of our improved stacker. Fig. 2 is a view in side elevation, partly in section thereof, showing the fork lowered; and Fig. 3 is a view similar to Fig. 2, but showing the fork elevated.

Referring to the drawings, the numeral 1 indicates the base of the stacker, comprising two parallel sills or runners 2, which are rigidly connected together by transverse cross-beams 3 and 4. Supported centrally by the cross-beams 4 is a pintle 5, on which is rotatably mounted a vertical standard 6, and said standard, intermediate its ends, is encircled by a collar 7, fixed between two transverse cross-bars 8, and to said cross-bars are rigidly attached beams 9, that at their lower ends are attached to the base 1 of the machine. To the standard 6, at a suitable point below its upper end, is secured a compound beam comprising two beams 10, which are supported intermediate their ends upon two transverse cross-bars 11, rigidly attached to the standard 6 in any suitable manner—as, for example, by a bolt 12. To the beams 10, at the point where they are supported, are attached uprights 13, united at their upper ends by a cross-brace 14, and passing over the cross-brace 14 is a cable 15, which at its opposite ends is attached to the ends of the compound beam, as will more fully hereinafter appear. The rear ends of

the beams 10 are preferably bent so as to bring them into juxtaposition and are secured together in any suitable manner, and to said ends is secured one end of the cable 15. The other ends of the two beams are secured between two transverse cross-bars 16 and 17, or are connected together in any other suitable manner. To the rear or connected ends of the beams 10 are secured two brace-bars 18, which at their forward ends are bolted to a cross-beam 19, which in turn is bolted transversely to the standard 6 by a bolt 20. Attached to said transverse beam by a bolt 20^a are two diagonal braces 21, which at their upper ends are bolted or otherwise suitably attached, as at 22, to the upper ends of the beams 10. The braces 18 and 21 and the beams 10 thus form a rigid frame which is fixed on the rotatable standard 6 and is rotatable therewith, but is incapable of any movement independently of said standard.

Pivoted upon the bolts 20^b, which are employed for connecting the braces 21 and 18 to the transverse beam 19, are secured the upper ends of two beams 23, the other ends of which are rigidly attached to a frame comprising uprights 24 and cross-bars 25, the two beams 23, uprights 24, and cross-bars 25^a constituting a tilting frame. The upper ends of the uprights 24 are concaved, as at 25^a, and rotatably seated on the concaved upper ends of said uprights is a rock-shaft 26, upon which are affixed intermediate their ends parallel fork-teeth 27. The rear ends of said teeth are rigidly fixed in any suitable manner to a transverse strip 28, and to said strip are fixed uprights 29, which at their upper ends are united by a corresponding cross-strip 30, and the uprights 29 and cross-strip 30 are rigidly braced to the fork-teeth by metallic straps or braces 31.

The rock-shaft 26 is rotatably held to its seat on the upper ends of the uprights 24 by metallic straps 32, which pass over said rock-shaft and down upon the opposite sides of the uprights 24, to which the ends of said straps are affixed. This will permit a rocking movement upon said uprights, which movement will be limited and controlled in a manner hereinafter to be described.

To the opposite ends of the cross-bar 16 of the stationary frame are appended pulleys 34, and to the cross-bar 17 are attached two ropes 35, which pass about pulleys 36, attached to the fork-frame, and thence pass over the pulleys 34. From thence the two ropes pass over a pulley 38, journaled in a bracket secured between the ends of arms 39, which are connected to the converging ends of the beams 10, and at their opposite ends are bolted to arms 42, hereinafter referred to. From the last-named pulley the ropes pass around a pulley 41, journaled between two horizontal arms 42, which are rigidly secured to the rotatable standard 6, and from thence the ropes pass around a pulley 43, journaled between two arms 44, fixed to the rotatable standard 6, and from the pulley 43 the ropes extend and are attached to a whiffletree or any device of the kind by means of which power may be applied to the machine by a draft animal or team.

It will be noted by reference to Fig. 1 that the pulley 43 is arranged to one side of the standard 6, and therefore eccentric of the base of the supporting-frame. This will throw the draft of the ropes 35 to one side of the standard 6, so that when draft is applied to the ropes to elevate the fork it will also cause lateral strain to be applied to the supporting-frame, thereby causing the latter to turn upon its pintle 5 and bring the fork to the proper position to discharge its load. When the load is released, the fork starts to descend in the usual manner and will cause the automatic return of the structure to its normal position.

Attached to the rear rail 30 of the fork is a rope 45, which passes around a sheave 46, and from thence it extends to and passes over a pulley 47, journaled on the rotatable standard 6, and at its end is connected to a vertical reciprocating locking-bar 48, the lower end of which is notched or recessed, as at 49. Journaled between the two arms 42 is a latch 50, said latch being pivoted intermediate its ends between said arms and arranged to engage at its lower end the recess 49, formed in the bar 48. To the upper end of the latch-lever 50 is pivotally secured a link 52, the other end of which is also pivotally secured to a lever 53, that is pivoted at one of its ends between the arms 42.

The operation of the device is as follows:

The parts being in the position shown in Fig. 1 of the drawings and the load of hay having been deposited upon the fork, power is applied to draw upon the ropes 35, and owing to the fact that the ropes referred to pass around the pulley 43, which, as before stated, is eccentrically disposed with relation to the standard 6, the fork not only operates to elevate its load of hay, but the entire structure carrying the fork is rotatably moved on the bearing 5 as a center, so that the hay is elevated by the fork

and at the same time the fork is swung in a lateral direction, so as to present the fork over the point at which the hay is desired to be discharged. Thereupon the operator has only to move the lever 53 in the proper direction, whereupon the latch-lever 50 will be disengaged from the bar 48 and the weight of the hay will thereupon cause the fork to drop and discharge its load. This operation will be repeated from time to time until the stack or rick has been properly made up, after which the machine will be moved forward to enable it to form a continuation of the rick or stack previously built up.

Having thus described our invention, what we claim is—

1. In a hay-stacker, a base, a revoluble standard carried thereby, a frame rigid with the standard, a tilting frame supported by the rigid frame, a fork carried by the outer end of the tilting frame, lifting-ropes connected with the outer portion of the rigid frame, thence passed downward and around sheaves on the fork, frame and thence up and around sheaves at the upper part of the rigid frame, and thence down and around sheaves at the base of the structure, a locking-bar, means for normally holding the same against movement, a flexible connection between the locking-bar and the fork, and tripping mechanism for releasing the locking-bar.

2. In a hay-stacker, the combination with a base, of a vertical revoluble standard thereon, a fixed frame rigidly attached between its ends to the standard, a tilting frame pivotally connected at one end to said standard, a rocking fork supported on the free end of the tilting frame, means for simultaneously raising and laterally swinging the frame carrying the fork, means for normally holding the fork in a substantially horizontal position, and tripping mechanism for releasing the fork.

3. In a hay-stacker, the combination with a base, of a vertical revoluble standard thereon, a fixed frame rigidly attached between its ends to the standard, a tilting frame pivotally connected at one end to said standard, a rocking fork supported on the free end of the tilting frame, cables connected with the tilting frame and passing over the pulleys on the fixed frame for raising and lowering the frame carrying the fork, means for normally holding the fork in a substantially horizontal position and tripping mechanism for releasing the fork.

4. In a hay-stacker, the combination with a base, of a vertical revoluble standard thereon, a fixed frame rigidly attached between its ends to the standard, a tilting frame pivotally connected at one end to said standard, a rocking fork supported on the free end of the tilting frame, arms attached to and projecting in opposite directions from the lower end of the standard, pulleys mounted on said arms and on the fixed frame, cables connected to the

free end of the frame carrying the fork and passing above said pulleys whereby the tilting frame is simultaneously raised and swung to one side, for the purpose specified.

5 5. In a hay-stacker, the combination with a base, of a vertical revoluble standard thereon, a fixed frame rigidly attached between its ends to the standard, a tilting frame pivotally connected at one end of said standard, a rock-
10 ing fork supported on the free end of the tilting frame, a cable attached to said fork and passing about suitable guide-pulleys on the fork-frame and on said standard, a locking-
15 bar on the standard to which said cable is attached, said bar being provided at its lower end with a notch, a pivoted latch-lever arranged to engage said notch and hold the fork in a substantially horizontal position, and tripping mechanism for throwing said latch-
20 lever out of engagement with said bar to release the fork, substantially as described.

6. In a hay-stacker, the combination with a

base, of a vertical revoluble standard thereon, a fixed frame comprising two beams connected together at their ends and rigidly at- 25
tached between their ends to the standard, a tilting frame pivotally connected at one end to said standard below the fixed frame, a rocking fork journaled intermediate its ends upon the tilting frame, means for raising and low- 30
ering the tilting frame, means for normally holding the fork in a substantially horizontal position, and means, under the control of the operator, for releasing said fork, substantially
as described. 35

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

OLOF NELSON.
LOUIS NELSON.

Witnesses:

JAMES H. BURGESS,
F. M. STOHL.