

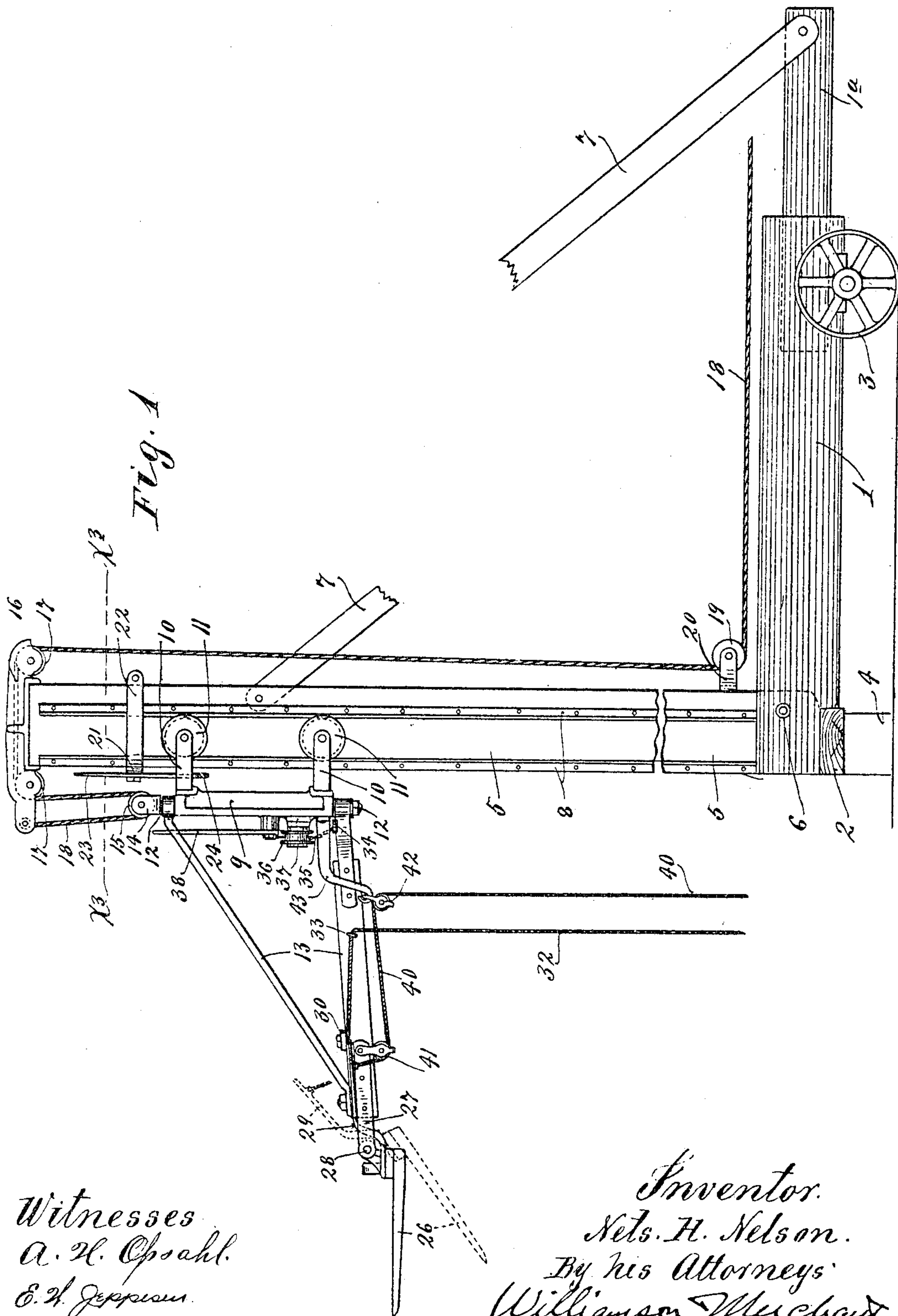
No. 799,077.

PATENTED SEPT. 12, 1905.

N. H. NELSON.
HAY ELEVATOR.

APPLICATION FILED DEC. 27, 1904.

3 SHEETS—SHEET 1.



Witnesses
A. H. Osahl.
E. H. Jeppesen.

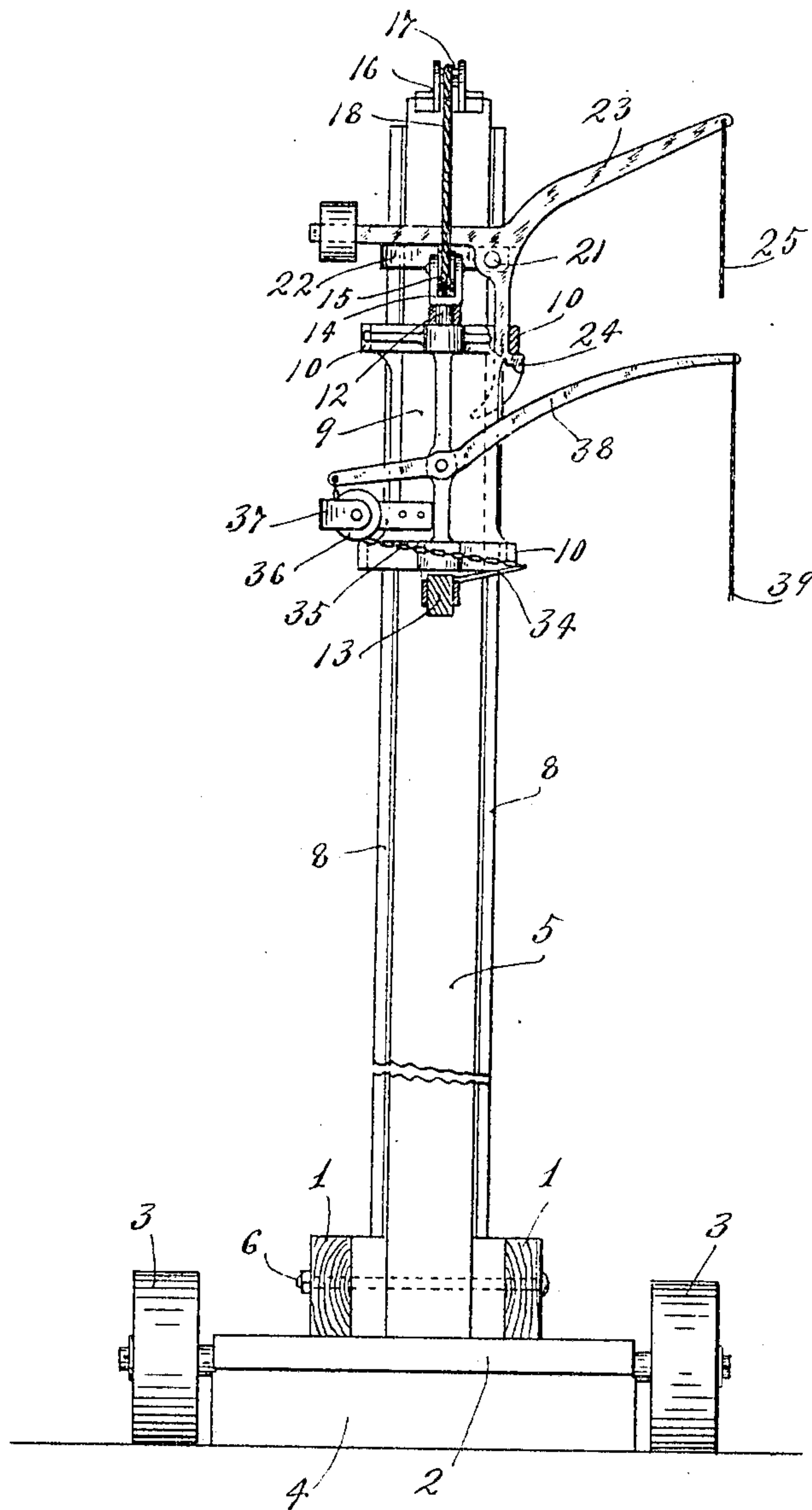
Inventor.
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By his Attorneys
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3 SHEETS—SHEET 2.

Fig. 2.



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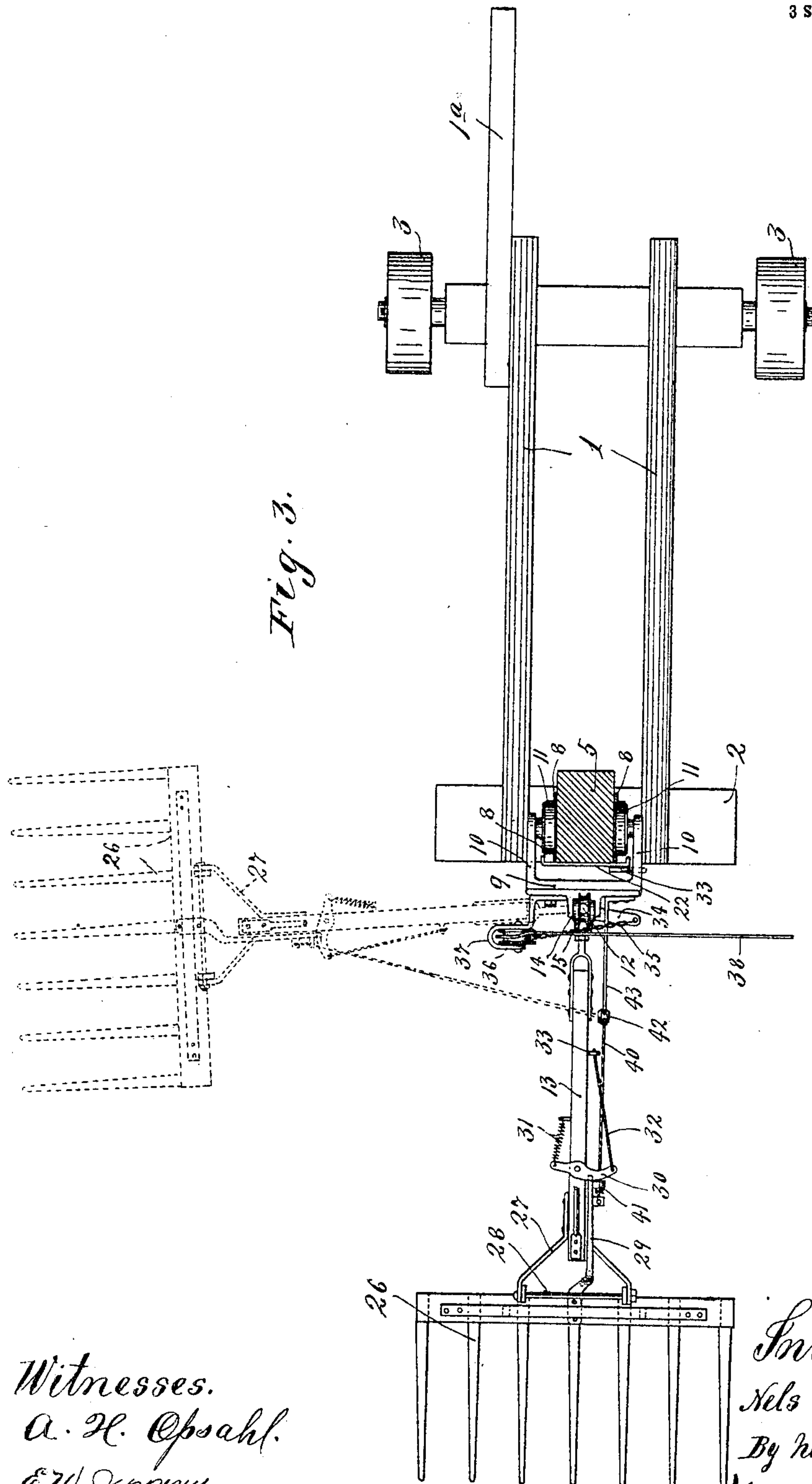
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

NELS H. NELSON, OF PENNOCK, MINNESOTA.

HAY-ELEVATOR.

No. 799,077.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed December 27, 1904. Serial No. 238,454.

To all whom it may concern:

Be it known that I, NELS H. NELSON, a citizen of the United States, residing at Pennock, in the county of Kandiyohi and State of Minnesota, have invented certain new and useful Improvements in Hay-Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide an improved hay-elevator or hoisting device; and to such ends it consists of the novel devices and combinations of devices herein-after described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view in side elevation, with some parts broken away, showing the improved elevator or hoisting device. Fig. 2 is a front elevation of the device with some parts sectioned and some parts removed, and Fig. 3 is a horizontal section taken approximately on the line $x^3 x^3$ of Fig. 1.

The numeral 1 indicates a base-frame which, as shown, is provided with a rear end extension 1^a, with a transverse front end steady-ing-beam 2, and with removable truck-wheel 3.

The numeral 4 indicates a block temporarily placed under the beam 2.

The numeral 5 indicates a heavy upright which is pivotally connected to the base-frame 1 at 6, so that when out of use it may be turned downward into a horizontal position on the frame 1. When the upright 5 is to be used, it is turned upward and secured by an inclined tie-bar 7, which, as shown, is detachably secured thereto at its upper end by a bolt or pin and to the frame extension 1^a at its lower end by a bolt or pin.

Rigidly secured on the sides of the upright 5 and extending longitudinally thereof are guide-rails 8, arranged in pairs.

A truck is mounted to move vertically on the upright 5. This truck is made up, as shown, of a body 9, a pair of yokes 10, and truck-wheels 11. The yokes 10 embrace the sides of the upright and are rigidly secured, one to the upper and the other to the lower end of the truck-body 9. The truck-wheels 11 are journaled to the prongs of the yokes 10 and work in the channels formed between the cooperating guide-rails 8. At its upper and lower ends the truck-body 9 is provided with trun-

nions 12, upon which are pivotally mounted for horizontal swinging movements a V-shaped supporting-bracket 13. The upper trunnion 12 has rigidly-secured ears 14, to which is journaled a guide-sheave 15.

Rigidly secured on the upper end of the upright 5 is a bearing-bracket 16, to which is journaled a pair of guide-sheaves 17, located the one in front and the other at the rear of the upright. A hoisting-cable 18 is, as shown, attached at one end to the forwardly-projecting end of the bearing-bracket 16, is passed under the guide-sheave 15, over the guide-sheaves 17, thence downward to the lower portion of the upright, and thence under a guide-sheave 19, mounted in a bearing 20 on the lower portion of said upright. As is evident, by drawing on the lower end of the cable 18 the truck and parts carried thereby may be raised and lowered on the upright. Power for drawing the cable may be supplied by hand, by an engine-driven drum, or by one or more horses hitched thereto.

Pivoted at 21 to a bracket 22, which is adjustably but rigidly secured on the upper portion of the upright, is a weighted latch-lever 23, provided with a cam-shaped or beveled lock-hook 24. This lock-hook or shouldered end of the latch-lever 23 stands in such position that when the truck is moved upward to an extreme position it will automatically engage with one prong of the upper yoke 10 of the truck and automatically lock the truck in its raised position. This latch-lever 23 is adapted to be released from the said yoke to release the truck by drawing on a trip-rope 25, which is attached to the free end of said lever and extends to the ground or to the lower portion of the upright.

A lifting fork or platform 26 is pivotally connected and normally locked to the outer end of the V-shaped supporting-bracket 13. As shown, said fork is pivotally attached to a pronged head 27 of said bracket 13 by means of a horizontal hinge-bolt 28. Rigidly secured to and projecting inward or rearward from the fork 26 is an arm 29, the free end of which is normally engaged by a latch 30, pivoted to the bracket 13 in position to engage the free end of said arm. A spring 31, attached to said latch and to said bracket, tends to hold said latch in position to engage said arm. The latch is adapted to be released at will from said arm by a trip-rope 32, attached to the free end thereof, and, as shown, passed

through a guide-eye 33 on the bracket 13, and from thence extends to the ground or to the lower portion of the upright.

Rigidly secured to the lower portion of the swinging bracket 13 and projecting radially to one side thereof from its hinge is an arm 34, and to the free end of this arm is attached a chain 35 or other flexible connection, that runs over a guide-sheave 36, mounted in a bearing 37 on the truck-body 9. The other end of this chain is attached to one end of a lever 38, which is pivoted to the truck-body 9 and to the free end of which is attached an operating-rope 39, that extends to the ground. The parts just described are so disposed that when the lever 38 is moved by drawing downward on the rope 39 the bracket 13 and the fork carried thereby will be swung to one side, as indicated by dotted lines in Fig. 3.

An operating-rope 40 is attached to the free end of the fork-arm 29, extends under a guide-sheave 41, carried by the lower portion of the frame 13, thence is passed over the sheave of a guide-block 42, and from thence is extended to the ground. The guide-block 42 is loosely supported, with freedom for angular movements, by an arm 43, rigidly secured to the lower end of the truck-body 9.

The operation of the device, briefly described, is as follows: When the truck and parts carried thereby are lowered close to the ground, with the fork preferably resting upon the ground, the hay is loaded onto the fork either by a hay-bucker, by hand, or any other suitable way until a full load has been accumulated. Then by pulling on the rope or cable 18, as described, the truck and the loaded fork should be raised until the former is locked by the latch-lever 23. Then by pulling on the rope 39 the bracket 13 and the fork are moved pivotally and are swung to one side, as shown by dotted lines in Fig. 3, into a position over the stack. This being done by pulling on the trip-rope 32, the latch 30 is released from the fork-arm 29, and the fork is thereby released and permitted to move pivotally downward under the weight of its load, (see dotted lines, Fig. 1,) and thereby drop its load onto the stack. By pulling on the rope 40 the fork-arm 29 is drawn downward and the fork is raised into a horizontal position, and, furthermore, a lateral pull is exerted upon the bracket 13, which serves to return the same back to its normal position. (Indicated by full lines in Fig. 3.) While the fork is being returned to its normal position, the latch 30 should be moved into an inoperative position by pulling on the rope 32. As is evident, the truck is released from the latch-lever 23 by pulling on the rope 25, and this being done the truck and all parts carried thereby may be lowered again to normal position.

In a companion application filed of even date herewith, entitled "Grain-elevating de-

vice," several of the features herein illustrated are disclosed and broadly claimed.

The device herein described and claimed is adapted especially for use on farms, and its use greatly reduces the amount of labor required in forming large haystacks. It is also adapted for use to elevate hay and to deliver the same through an upper door or window of a barn, the lateral movement of the fork and its carrying-bracket serving to pass the hay through such opening.

From what has been said it will be understood that the device described is capable of modifications within the scope of my invention, as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with an upright and a truck mounted to move vertically thereon, of a supporting-bracket pivoted to said truck for lateral swinging movements, and a fork or carrier pivoted on the free end of said bracket for dumping movements, substantially as described.

2. The combination with an upright and a truck movable vertically thereon, of a supporting-bracket pivoted to said truck for lateral swinging movements, a fork hinged to the free end of said bracket for pivotal dropping movements, a latch for securing said fork in an operative position, a trip connection for said latch, and a connection applied to said supporting-bracket and to said truck and extending downward and adapted to swing said bracket, substantially as described.

3. The combination with an upright and a truck mounted to travel vertically thereon, of means for raising and lowering said truck on said upright, a supporting-bracket pivoted to said truck for lateral swinging movements, a fork hinged to the free end of said bracket, a latch for said fork, an extended trip connection for said latch, means for swinging said bracket with a load, while elevated, and a latch for holding said truck in an elevated position, provided with a trip connection, substantially as described.

4. The combination with a base-frame, of an upright pivoted thereto at its lower end, a brace for holding said upright in operative position, but detachable to permit the same to be turned downward, a fork or carrier mounted to move vertically on said upright, and means for raising and lowering the same on said upright, substantially as described.

5. The combination with an upright and a truck movable vertically thereon, of a bracket hinged to said truck for lateral swinging movements, a fork hinged to the free end of said bracket, and having an inwardly-projecting arm, a latch on said bracket cooperating with said arm to hold said fork in an operative position, and extended trip connection for said bracket, a latch-lever automatically engage-

able with said truck to hold the same in a
raised position, a trip for said latch-lever, a
lever pivoted to said truck and having a flexi-
ble connection to a projecting portion of said
5 bracket, for swinging the same, an extended
operating connection applied to said lever,
and a flexible connection applied to the arm
of said fork, passed over a guide on said
bracket and extended downward to within

reach from the ground, substantially as de- 10
scribed.

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

NELS H. NELSON.

Witnesses:

ANTON PETERSON,
E. L. THORPE.