

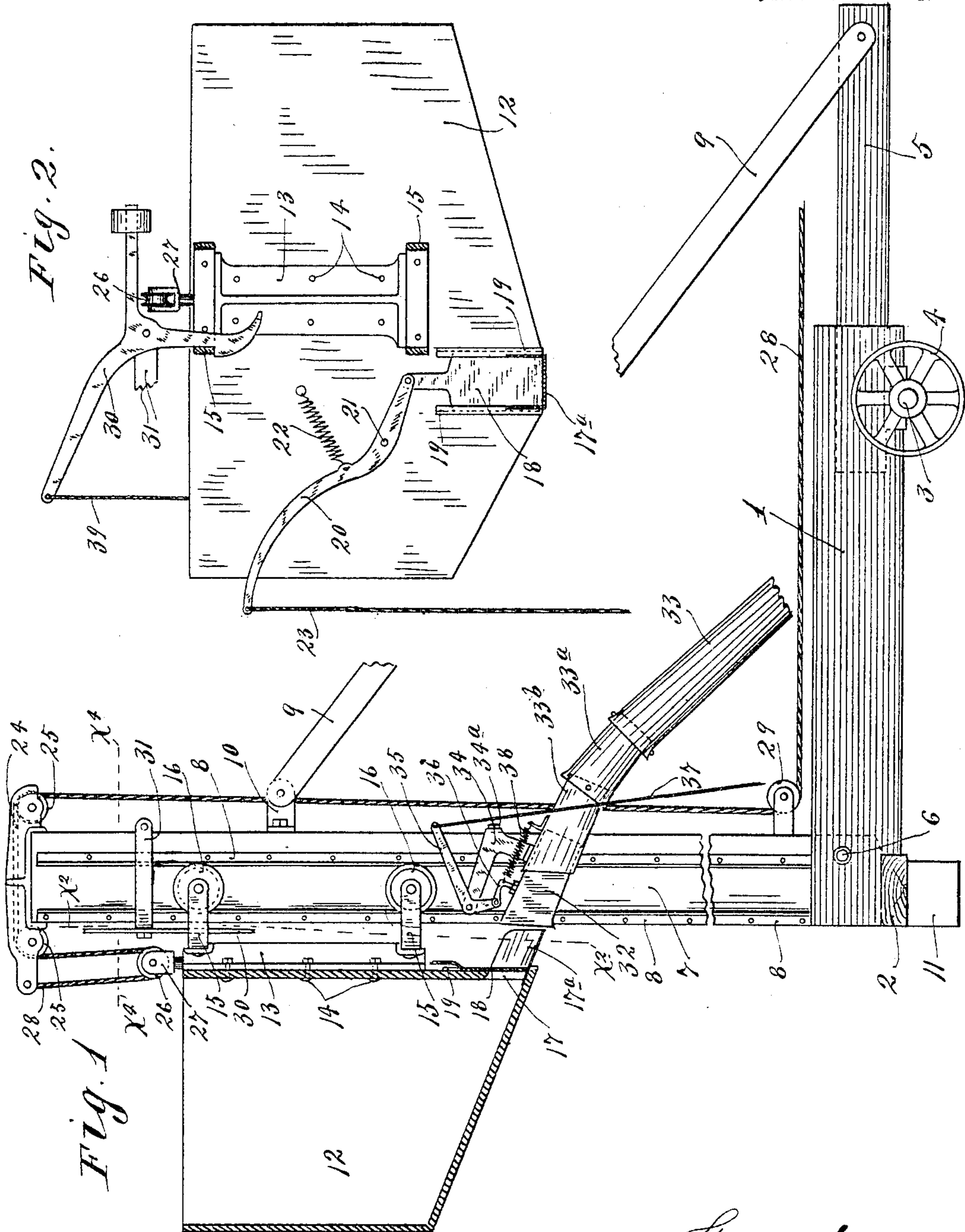
No. 799,078.

PATENTED SEPT. 12, 1905.

N. H. NELSON.
GRAIN ELEVATING DEVICE.

APPLICATION FILED DEC. 27, 1904.

3 SHEETS—SHEET 1.



Witnesses
A. B. Opsahl.
E. W. Jepsen.

Inventor.
Nels. H. Nelson.
By his Attorneys.
Williamson & Muchant

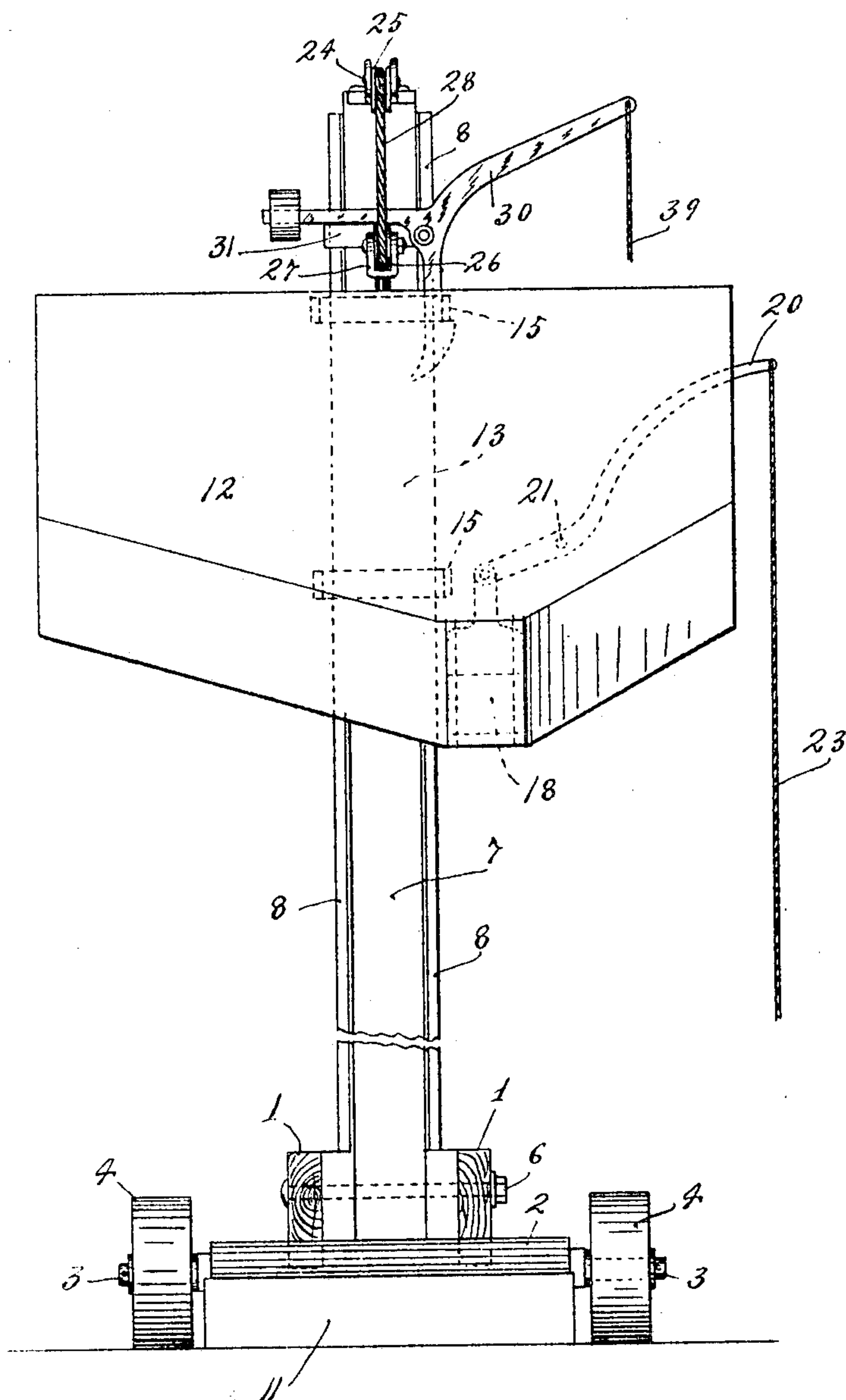
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38 SHEETS—SHEET 2.

Fig. 3.



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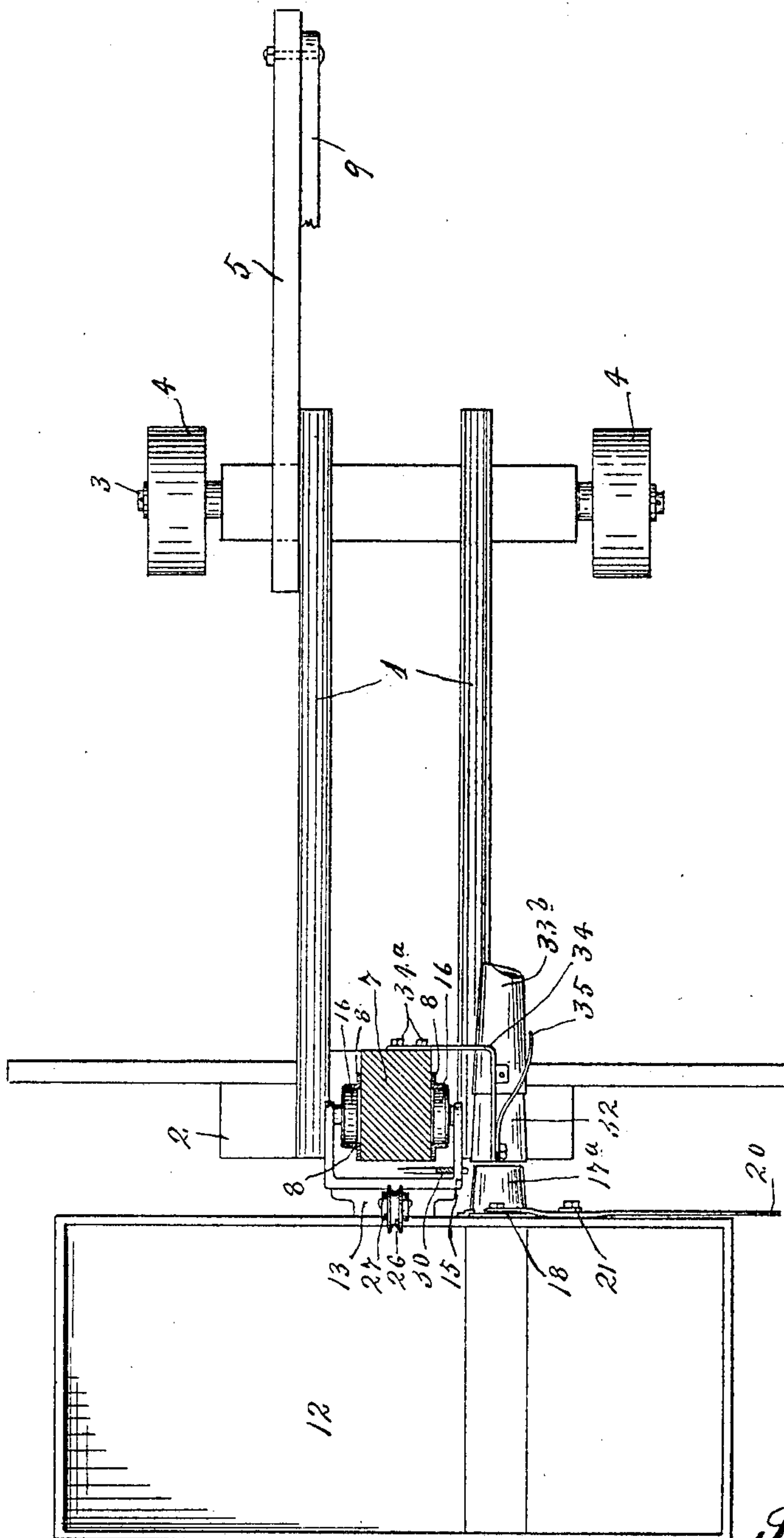
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3 SHEETS—SHEET 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

NELS H. NELSON, OF PENNOCK, MINNESOTA.

GRAIN-ELEVATING DEVICE.

No. 799,078.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed December 27, 1904. Serial No. 238,455.

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 Grain-Elevating Devices; 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 invention has for its especial object to provide an improved elevating device for use on farms and elsewhere to elevate grain and deliver the same into storage bins or silos; and to such ends it consists of the novel devices and combination of devices hereinafter 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 principally in side elevation, but with some parts sectioned and some parts broken away, showing my improved elevating device. Fig. 2 is a transverse section taken approximately on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a front elevation of the device, some parts being removed; and Fig. 4 is a horizontal section taken approximately on the line $x^4 x^4$ of Fig. 1.

The numeral 1 indicates a heavy supporting-base, as shown, in the form of a frame constructed of timbers, and provided at its forward end with a transverse rest-beam 2 and at its rear end with an axle 3, equipped with detachable wheels 4. The numeral 5 indicates a rear-end extension of the frame 1.

Pivoted at 6 to the forward end of the frame 1 is a heavy upright 7, having on its opposite side faces longitudinally-extended guide-rails 8.

When the device is to be moved, the upright 7 may be turned downward in a horizontal position; but when it is in an operative position it stands substantially vertical and is held in such position by a heavy brace-bar 9, detachably secured thereto at 10 at its upper end and detachably secured at its lower end to the frame extension 5 by pins or bolts. When the device is located for work, the wheels 4 will usually be removed, so that the base-frame may rest flat upon the ground.

The numeral 11 indicates a loose block which is temporarily placed under the rest-beam 2.

A truck runs vertically up and down the upright 7, and a large grain bucket or hopper 12 is rigidly but detachably secured to the

body 13 of said truck, as shown, by means of short nutted bolts 14. The truck-body 13 is provided with U-shaped brackets 15, that embrace the sides of the upright 7 and are provided with truck-wheels 16, that run in the channels formed between the cooperating pairs of rails 8.

At its lowermost portion the hopper 12 is provided with a discharge-orifice 17, which is normally closed by a vertically-movable gate 18, mounted in guides 19 on the rear face of the hopper and pivotally connected to a lever 20, which is pivoted to said hopper at 21. A spring 22, attached to said lever and to said hopper, normally holds the gate 18 closed. The discharge-orifice 17 is provided with an extended discharge-spout 17^a. To the free end of the lever 20 is attached a depending trip connection, preferably in the form of a rope 23, which is long enough to always approximately reach the ground.

In practice the upright 7 will often be made more than twenty feet in height. On its extreme upper end it is provided with a bearing-bracket 24, on which is journaled a pair of guiding-sheaves 25, one located in front and the other at the rear of the upright. Another guide-sheave 26 is journaled in a bearing-head 27, which is secured to the upper portion of the truck-body 13. A hoisting cable or rope 28 is attached at one end to the forward end of the bracket 24, is passed under the sheave 26, over the two sheaves 25, and, as shown, under a guide-sheave 29, mounted on the lower portion of the upright 7. The hopper 12 may be raised by drawing on the lower end of the cable 28, and this may be done either by hand, by an engine-driven drum, (not shown,) or by one or more horses hitched to said cable.

When the hopper 12 is raised, as shown in Fig. 1, one prong of the upper truck-yoke 15 is engaged by the hooked end of a weighted latch-lever 30, which, as shown, is pivoted to a bracket 31, rigidly but adjustably secured to the upper end of the standard 7. By this latch 30 the hopper is held or locked in an elevated position, and when it is thus held its discharge-spout 17^a is alined with a telescopically-extensible section 32 of a discharge-spout 33. This discharge-spout at its upper end is preferably formed with pivotally-connected sections 33^a and 33^b, which give such flexibility to the spout that its free end may be moved over a considerable area, thereby permitting the grain to be directed to the de-

sired point of discharge. As shown, the upper end of the spout is supported by a bracket 34, which bracket is adapted to be secured in different vertical positions on the upright by means of lag-screws 34^a or other suitable devices. As shown, one prong of the bracket 34 is rigidly secured to the spout-section 33^b. To the other prong of said bracket is pivoted a bell-crank 35, the lower arm of which is connected to the extensible spout-section 32 by means of a short link 36. A trip-rope 37, which extends to the ground, is attached to the upper arm of the bell-crank 35, so that by pulling on said rope the spout-section 32 may be telescoped over the discharge-spout 17^a. A spring 38, connected to the spout-sections 32 and 33^b, normally holds the former drawn into the latter, as shown in Fig. 1.

The operation of the device is probably evident, but may be briefly stated as follows: The hopper 12, being loaded with grain, is elevated by drawing on the cable 28, as already described, and as it reaches its extreme upper position the upper truck-yoke 15 engages the cam-shaped end of the weighted latch-lever 30, passes the said cam end, and is then engaged and locked by said lever. Then by pulling on the rope 37 the spout-section 32 is telescoped over the spout 17^a, and then by pulling on the trip-rope 23 the valve 18 is opened and the contents of the hopper are permitted to run therefrom out through the discharge-spout. After the hopper has been emptied by drawing on the trip-rope 39, which is attached to the free end of the weighted latch-lever 30 and extends to the ground, the hopper is released and may then be lowered at will.

The hopper may be detached from the truck and another form of carrier may be applied thereto—such, for instance, as that shown in a companion application filed by me of even date herewith, entitled "Hay-elevator."

From what has been said it will be understood that the device described is capable of modification 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, of a carrier movable vertically thereon, and having a valved discharge-opening, a connection for operating the valve of said discharge-opening

from the lower portion of said upright, means for raising and lowering said carrier on said upright, and a latch for securing said carrier in an elevated position on said upright, said latch having a trip connection extending to the lower portion of said upright, substantially as described.

2. The combination with an upright, of a delivery-spout supported at its upper end from the upper portion of said upright, and having an extensible receiving-section, connections for distending said receiving-section from the lower portion of said upright, a hopper having wheels working in guideways on said upright, means for moving said hopper vertically on said upright, a valved discharge-opening in said hopper adapted to register with said extensible spout-section, a connection for operating the valve of said discharge-opening from the lower portion of said upright, a latch for holding said hopper in a raised position, and a trip connection for said latch extending to the lower portion of said upright, substantially as described.

3. The combination with an upright 7 having vertical guide-rails 8, of a truck having wheels working in the channels between said guide-rails, a hopper secured to said truck and provided with a discharge-opening, a valve 18 normally closing said discharge-opening 17, a spring-pressed lever 20 attached to said valve 18 and to said hopper and having a trip connection 22, a sheave and cable hoisting device for raising said hopper on said upright, a latch-lever 30 operative on a part movable with said truck and hopper, to hold the same in an elevated position, a trip connection 39 applied to said latch-lever 30, a delivery-spout supported from the upper portion of said upright, and having a distensible section 32 adapted to register with the hopper discharge-opening 17 when said hopper is raised, a spring normally retracting said spout-section 32, a lever connected to said spout-section, and a trip connection attached to said lever, substantially as described.

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

NELS H. NELSON.

Witnesses:

ANTON PETERSON,
E. L. THORPE.