

**No. 608,405.**

**Patented Aug. 2, 1898.**

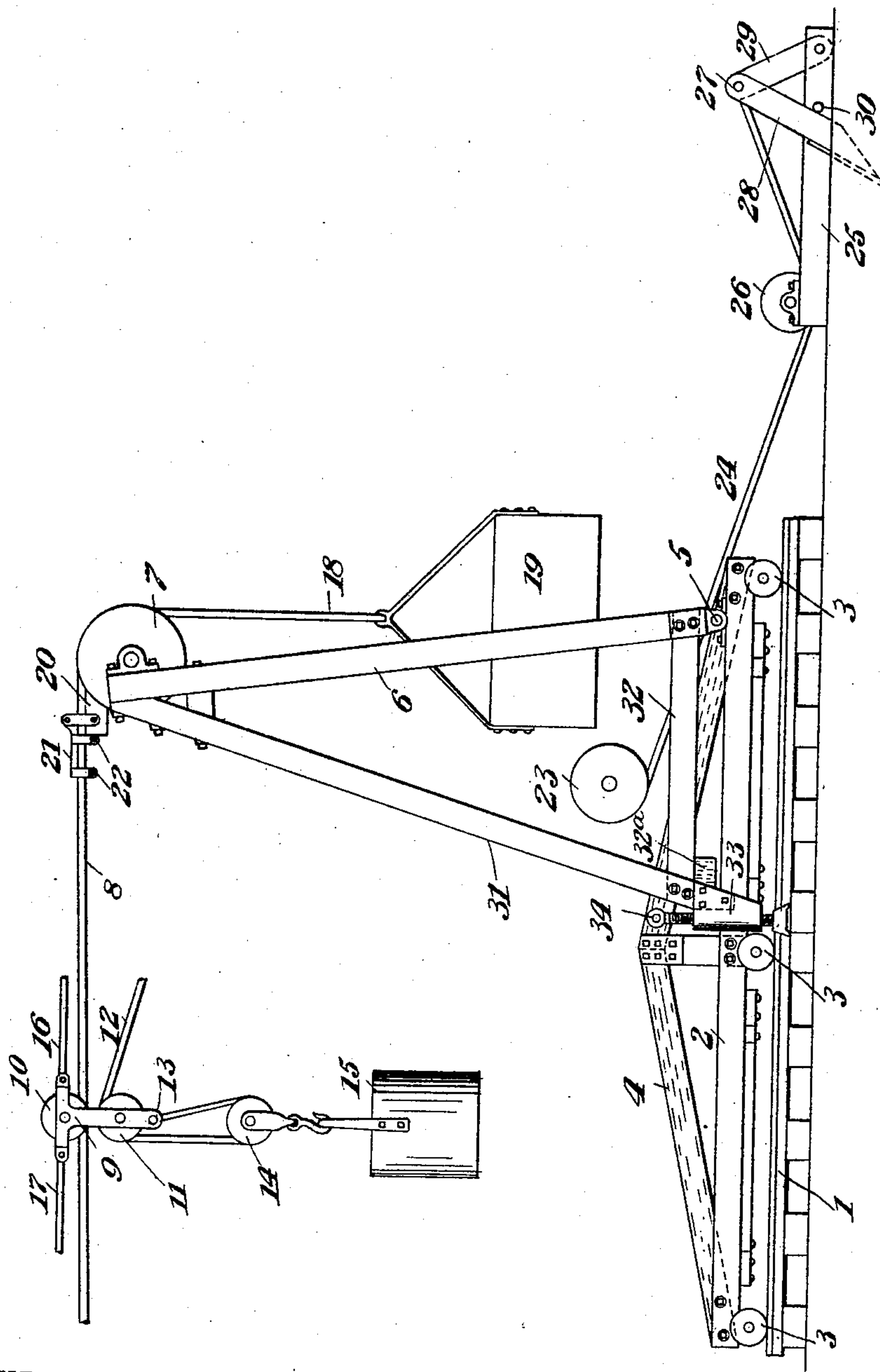
**P. N. JONTE.**

**HOISTING AND CONVEYING APPARATUS FOR EXCAVATING, &c.**

(Application filed Sept. 30, 1897.)

(No Model.)

**4 Sheets—Sheet 1.**



**WITNESSES**

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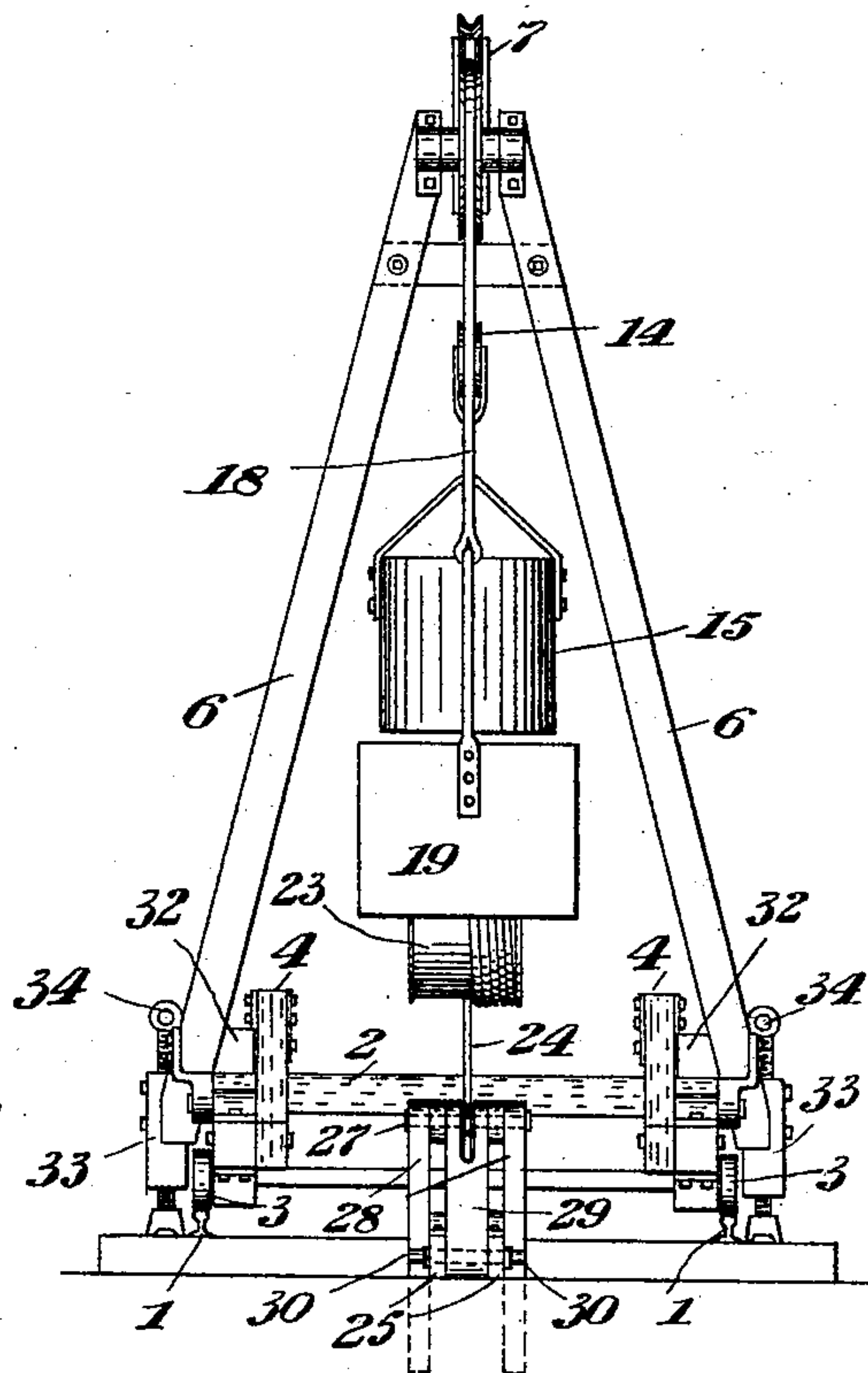
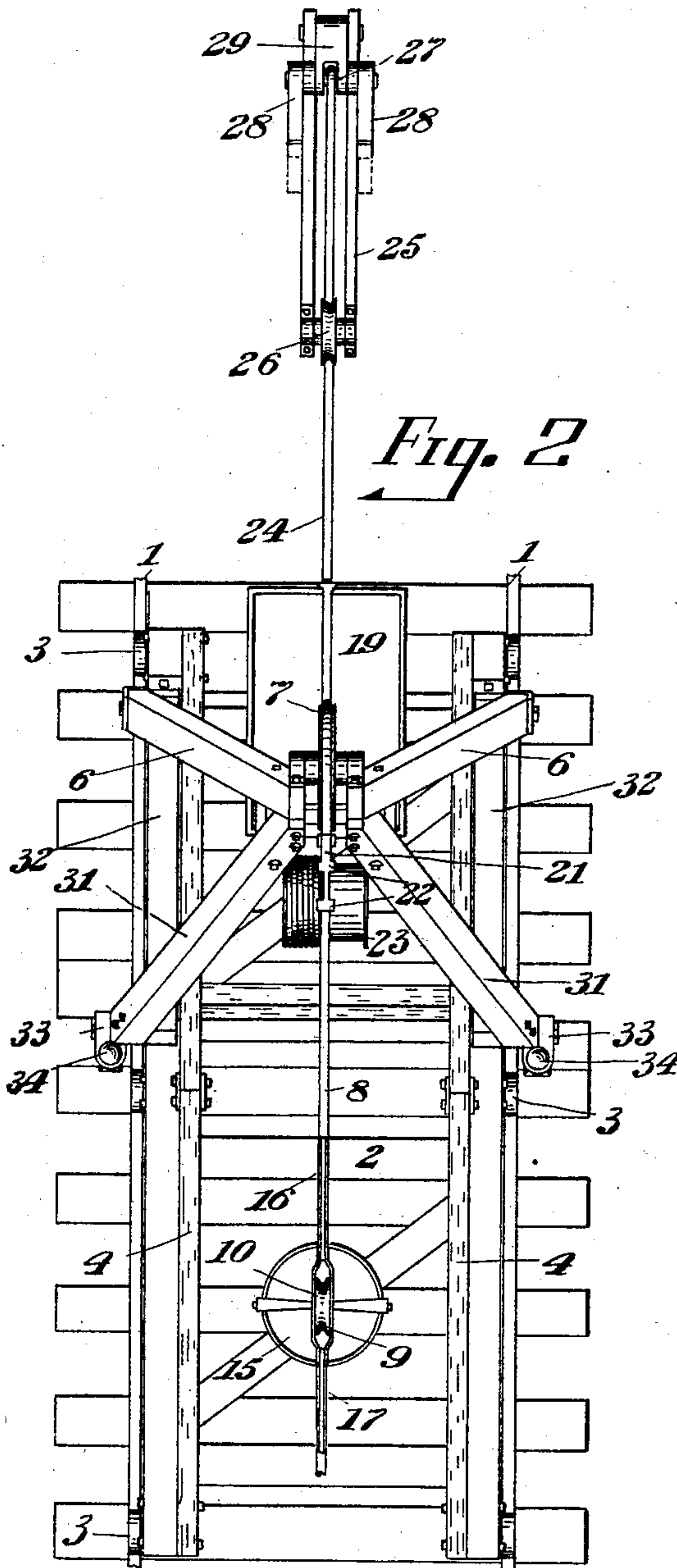
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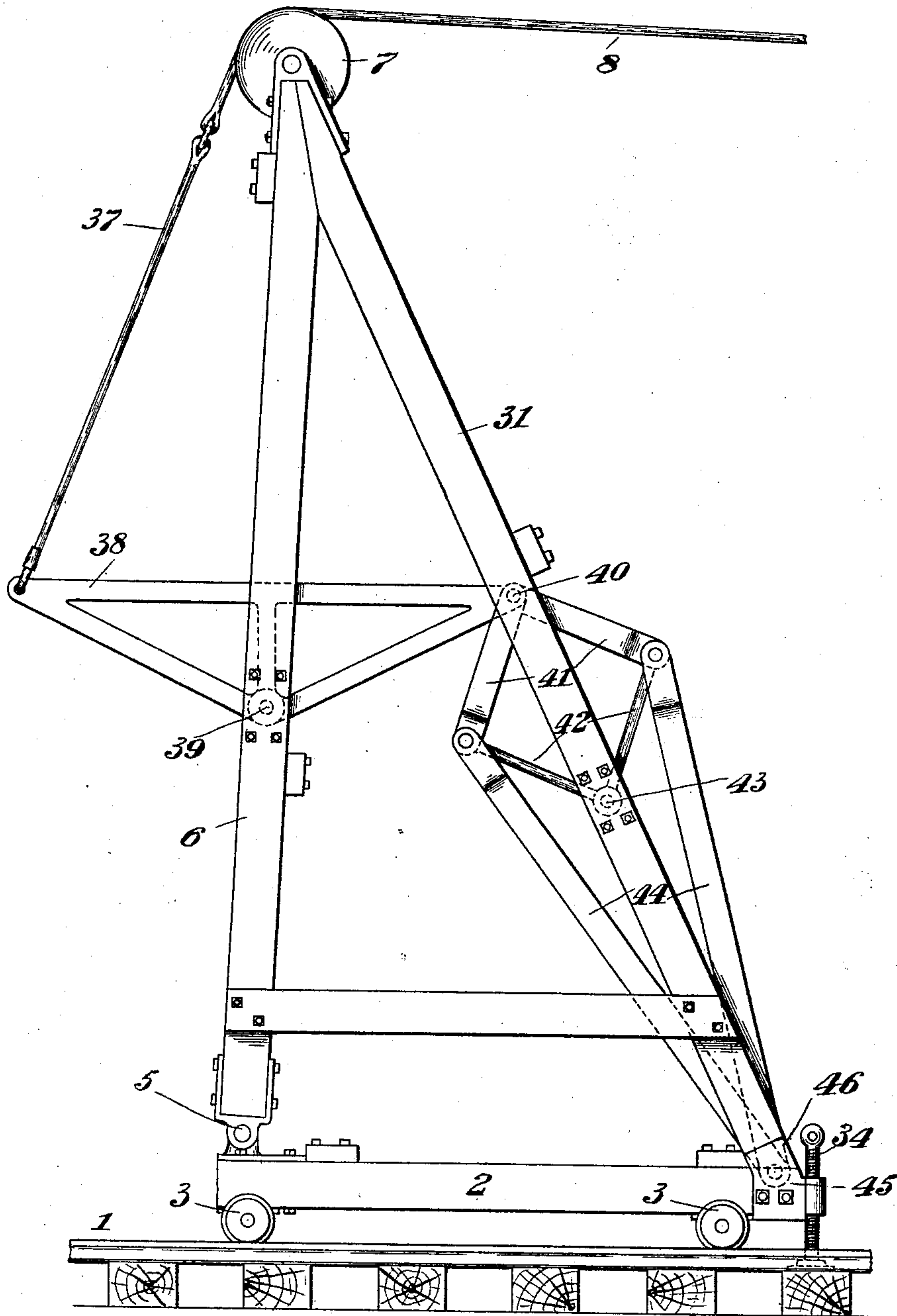
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Fig. 4

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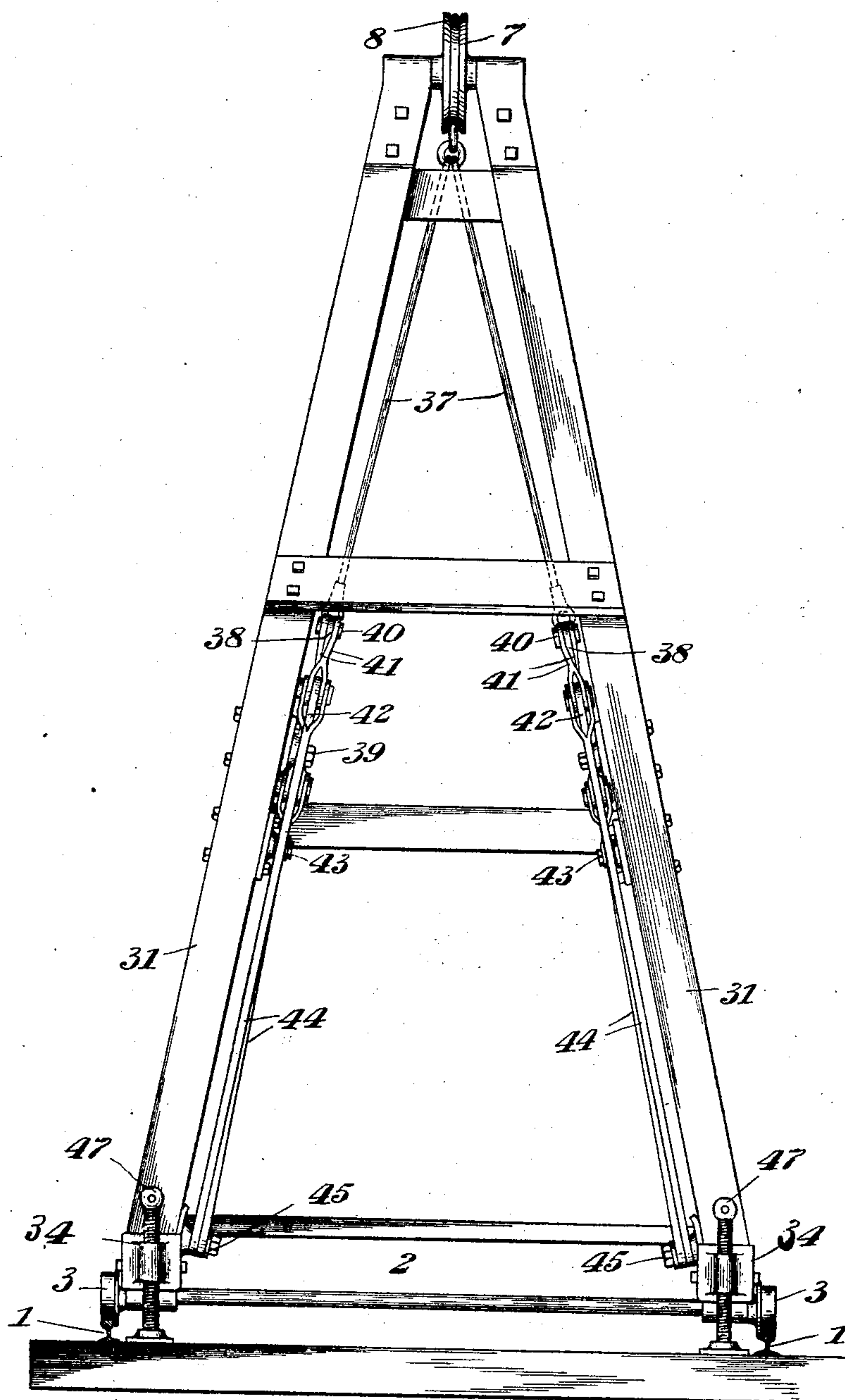
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WITNESSES

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Fig. 5

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# UNITED STATES PATENT OFFICE.

PETER N. JONTE, OF CINCINNATI, OHIO.

## HOISTING AND CONVEYING APPARATUS FOR EXCAVATING, &c.

SPECIFICATION forming part of Letters Patent No. 608,405, dated August 2, 1898.

Application filed September 30, 1897. Serial No. 653,556. (No model.)

*To all whom it may concern:*

Be it known that I, PETER N. JONTE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Hoisting and Conveying Apparatus for Excavating, Trenching, &c.; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in portable cable-tramways such as are used in excavating, trenching, and the like; and the object of the invention is to improve and strengthen the several parts of the apparatus, so as to lessen the liability of damage to the cable, and also to provide means for preventing the overthrow of the towers or supports for the ends of the cableway.

The invention contemplates certain novel features of the construction, combination, and arrangement of the several parts of the improved cable-tramway whereby the overthrowing of the end towers or supports is prevented and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my invention may be the better understood, I have illustrated the same in the accompanying drawings, wherein—

Figure 1 is a side elevation showing the head end of a cableway constructed according to my invention, together with the load-carrying devices, the tail end of the apparatus being omitted, it being by preference a duplication of the devices used at the head end, with the exception of the anchorage, which is necessary and used at the head end only. Fig. 2 is a plan view of the same end of the cableway. Fig. 3 is a front elevation of the same parts. Fig. 4 is a side elevation showing one of the end supports of the cableway provided with a modified arrangement of compensating connection with the end of

the cable, and Fig. 5 is a front elevation of the same parts.

Referring first to Figs. 1, 2, and 3, 1 1 indicate the rails of a temporary track laid along the line of the excavation or trench to be made and adapted to support a carriage at each end of the cableway, one of said carriages being used to support each of the end towers or supports of the apparatus. As shown in the drawings, the carriage comprises a frame 2, having wheels 3 to roll upon the track-rails 1 and provided with a strengthening brace or truss 4, extending along each of its sides.

At the outer end of the carriage is pivotally mounted a tilting frame or pier-like structure, which forms the end tower or support of the cableway, and said frame or pier comprises two beams 6, pivoted at their lower ends, as indicated at 5, to opposite sides of the carriage, and two braces 31, connected at their lower ends by means of cross-beams 32, said beams 6 and braces 31 being inclined toward each other at their upper ends and carrying between them a grooved sheave or pulley 7, over which passes the end of the cable 8, along which the load-carrying device travels.

The load-carrying device comprises a traveling frame 9, having a grooved roller 10, resting on the cable 8 to permit of moving the device along the same, the lower end of the frame 9 being provided with a sheave 11, over which passes a hoisting-cable 12, one end of which is connected, as shown at 13, to the frame 9 and formed into a bight, with which is engaged a block 14, carrying a bucket or shovel 15, while the other end of the cable 12 is carried to a hoisting-drum (not shown) preferably mounted on one of the carriages at the ends of the apparatus.

By means of the cable 12 it will be seen that the bucket or shovel 15 may be conveniently raised and lowered, and in order to permit the load-carrying device to be moved along the cable or track-way 8 I provide a traveler-rope 16, connected to the frame 9 and passing over a drum (not shown) also mounted on one of the end carriages of the apparatus. A tail-rope 17 is also provided for moving the load-carrying device in the reverse direction, as will be readily understood.



Each end of the cable 8 depends, as shown at 18, beyond the sheave 7 and carries a weight or counterbalance for the central portion of the cable and for the load-carrying devices 5 and load, and by preference each weight is formed of a bucket or receptacle 19, connected to the depending end 18 of the cable and adapted to be filled with stones, earth, or the like sufficient to place the desired tension upon the cable. By this arrangement when it is desired to move the cableway the buckets may be emptied, so as to lessen the weight of the apparatus. I also preferably provide each end of the cable with a stop or chock to lessen the strains placed upon the same by the weights at the ends thereof. As shown in the drawings, 20 indicates the chock or stop adapted for engagement with the pulley or sheave 7, said chock or stop being carried by a frame 21, having arms 22 embracing the cable 8 and adapted to be clamped fast to the same in any desired way. When the buckets 19 have been filled, so as to place the cable under a proper tension, each chock or stop 20 is set against the periphery of the sheave 7 and secured in position by clamping the arms 22 of its frame fast to the cable. Should the central portion of the cable sway or sag under the weight of the load, so as to lift the weights at its ends, the stops 20 by contact with the pulleys 7 will lessen the strain upon the central portion of the cable when the load is discharged and the weights descend.

In order to permit of moving the cableway along the trench or excavation, I provide at the head end an anchoring device, and on the carriage at that end of the apparatus I mount a drum 23, which may be driven in any suitable way. On the drum 23 is arranged to wind a cable or rope 24, which passes under a sheave 26 on one end of the frame 25 of the anchoring device, beyond which sheave the said cable or rope is carried up and has its end connected to a bolt 27, carried by the forked upper end of a link 29, the lower end of which is pivotally connected with the frame 25 of the device.

To each end of the bolt 27 is connected the upper end of a plunger 28, working outside the frame 25 and having engagement with a pin or projection 30 thereon, so that the extremity of the plunger which is sharpened is directed into the ground. Thus it will be seen that any strains placed upon the cable 24 will tend to force the plungers 28 deeper into the earth, so as to render the anchorage the more secure. At the same time when it is desired to move the cableway along the line of the trench or excavation it is only necessary to wind the cable 24 upon the drum or windlass 23, so as to move the carriages upon the tracks at the ends of the cableway.

The tilting frame, which supports the end of the cableway, is formed with forward braces 31, inclined toward and connected with each other at their upper ends and also inclined

toward and connected with the upper ends of the uprights or vertical beams 6, so that the frame is given a somewhat pyramidal form, the outer surface thereof being most nearly perpendicular. The braces 31 are tied to the uprights 6 at the lower end of the frame by cross-beams 32, which when the cableway is not in use have engagement with a beam 32<sup>a</sup> upon the carriage-frame; but when the cableway is in position for use the lower ends of the braces 31 of the triangular frame are frictionally engaged with the ground on each side of the carriage-frame or with one of the ties of the temporary track, so as to securely support the end of the cable and also to prevent the carriage whereon the tilting frame is mounted from rolling along the temporary track.

In order to permit of conveniently engaging the braces 31 with the earth, I provide each brace at its lower end with a depending shoe 33, which carries a jack-screw 34, the lower end of which is adapted for engagement with one of the ties of the temporary track or with the ground on which said track rests. When the jack-screws 34 are turned, the frame will be tilted upon its pivotal connections 5 at its outer end, and its inner end will be lifted clear of the carriage-frame and braced against the ground at each side thereof, so as to afford a secure support for the end of the cable 8. When the cableway is to be moved, the jack-screws 34 will of course be turned so as to lower the frame into contact with the carriage and lift the screws out of contact with the ground.

In Figs. 4 and 5 I have shown a modified form of the tilting tower or frame at the end of the cableway, wherein another form of compensating device is employed in lieu of the weight shown in Figs. 1, 2, and 3. In this form of the invention the depending end of the cable 8 beyond the sheave 7 is connected by links 37 with the outer ends of levers 38, pivoted, as shown at 39, upon the uprights 6 and having their opposite ends directed inward toward the braces 31 and each connected, as shown at 40, with the upper ends of a pair of toggle-levers 41, the lower ends of which are connected by means of links 42 with the braces 31, to which said links are pivoted, as shown at 43.

The lower ends of the toggle-levers 41 are also connected with the forked upper ends of levers 44, which extend down and are pivoted at their lower ends, as shown at 45, to castings 46, carried on the end of the carriage and provided with jack-screws 34, by means of which latter the wheels 3 at that end of the carriage may be lifted from the temporary track. By this arrangement of the parts it will be seen that when a strain is thrown upon the central portion of the cable 8, tending to overthrow the supporting frame or tower at the end thereof, the connection between the cable and the levers 38 will cause the levers to be moved pivotally, the forward



ends thereof moving the toggle-levers 41 downward and swinging the links 42 pivotally. The links and levers being connected with the levers 44, which have a connection at their lower ends with the fixed end of the carriage, it will be evident that the pivotal movement of the links 42 will tend to raise the braces 31 and swing the tilting frame pivotally in such a way as to compensate for the strain on the cable.

From the above description it will be seen that the cableway constructed according to my invention is of an extremely simple and durable construction and by the arrangement of the compensating devices at the cable ends materially relieves the strains upon the same, so as to lessen the liability of any breakage of the cable. Furthermore, by the construction of the apparatus with a rocking or tilting support having means of engagement with the ground at each side of the platform or carriage whereon the support is mounted it is evident that the bracing of the end towers or supports of the cable may be much more conveniently and quickly effected, so as to better adapt the device for use.

It will also be apparent from the above description of my invention that the cableway constructed in accordance therewith is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the parts herein set forth.

Having thus described my invention, I claim—

1. The combination of a cable or track way, a platform at one end thereof and capable of movement in a direction lengthwise of the cable or track way, a rocking support carried on said platform and adapted to support the end of the cable or track way, and a bracing device to hold said rocking support in position, said bracing device having at its end means to engage the ground adjacent to said platform, substantially as set forth.

2. The combination of a cable or track way, a platform at one end thereof and capable of movement in a direction lengthwise of the cable or track way, a rocking support on said platform to support the end of the cable or track way, and a bracing device to hold said rocking support in position, said bracing device comprising a jack-screw adapted for engagement with the ground and a connection between said jack-screw and the support, substantially as set forth.

3. The combination of a cable or track way adapted for the passage of a load-carrying device, supports having pulleys over which the end portions of the cable or track way pass, a compensating connection between the cable or track way and each end support, and stops to limit the movement of the cable over the pulleys, substantially as set forth.

4. The combination of a cable or track way adapted for the passage of a load-carrying device, a platform at one end thereof and capable of movement in a direction lengthwise of the cable or track way, a rocking support carried on said platform to support the end of the cable or track way, a bracing device for holding said support in position, and a compensating connection between the end of the cable and the rocking support to relieve the strains on the cable, substantially as set forth.

5. The combination of a cable or track way, supports for the ends thereof, movable carriages whereon the supports are mounted to rock, weights connected to the ends of the cable to hold the same under tension, and bracing devices for said supports, said bracing devices being adapted for frictional engagement with the ground to hold said supports in position, substantially as set forth.

6. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable mounted to tilt upon the carriage, a connection between the support and the end of the cable, said support being adapted to rest upon the carriage when the same is being moved and means, having engagement with the ground adjacent to the carriage, for tilting the support into operative position when the carriage is in place for use, substantially as set forth.

7. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable or track way mounted on the carriage and an anchoring device comprising a frame having a plunger adapted to be driven into the ground, substantially as set forth.

8. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable or track way mounted on the carriage, an anchoring device comprising a frame having a sheave and a movable plunger adapted to be driven into the earth, and a cable or rope connected at one end to the carriage and at its other end to the frame of the anchoring device, said rope or cable being engaged with the sheave and plunger of the anchoring device, and being adapted, when placed under tension, to force the plunger into the earth, substantially as set forth.

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

PETER N. JONTE.

Witnesses:

JOHN E. JONES,  
J. D. THORNE.