

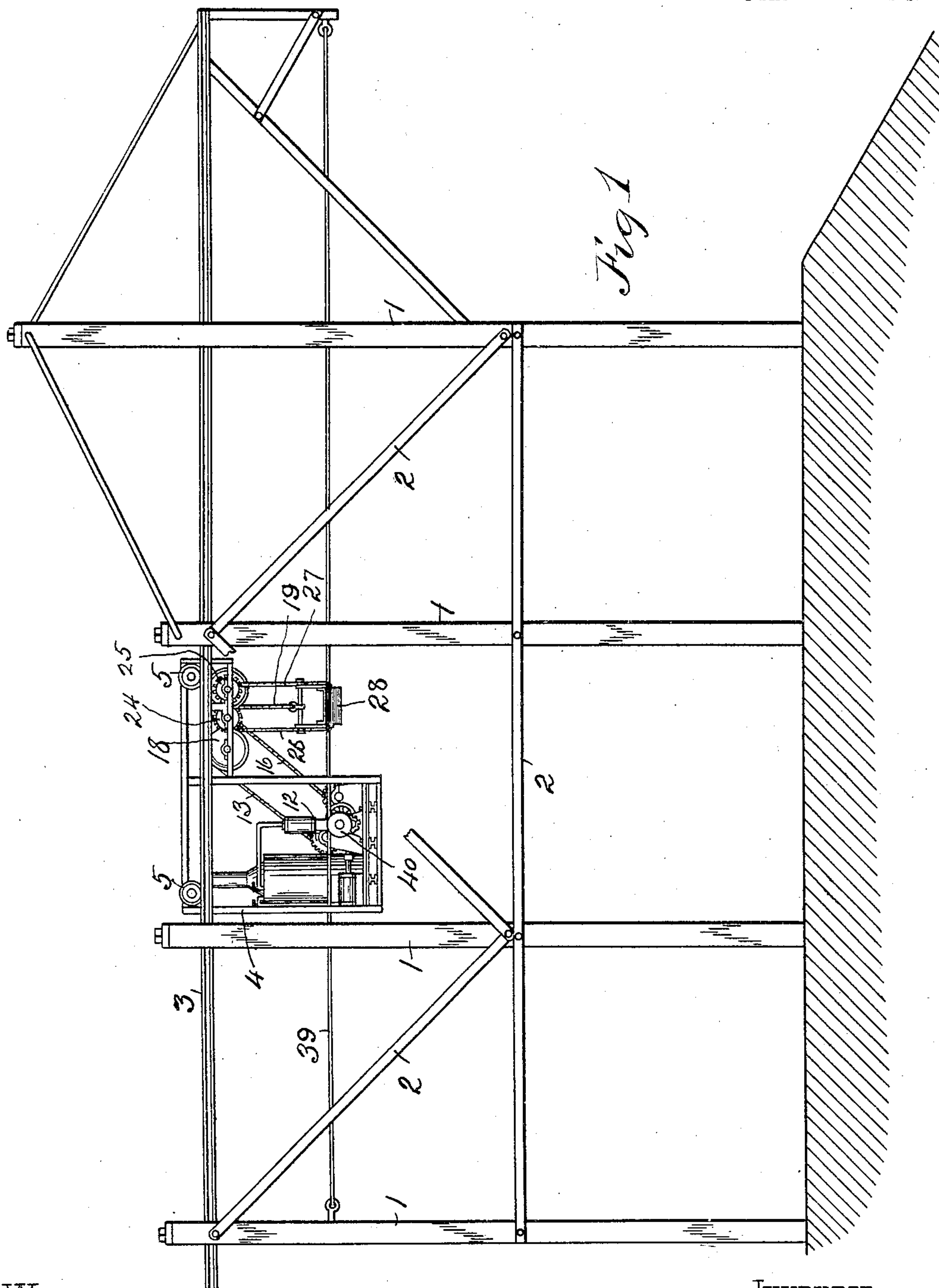
No. 792,115.

PATENTED JUNE 13, 1905.

M. A. BOGIE.
TRAVELING DERRICK.

APPLICATION FILED FEB. 13, 1904. RENEWED NOV. 25, 1904.

5 SHEETS—SHEET 1.



WITNESSES:

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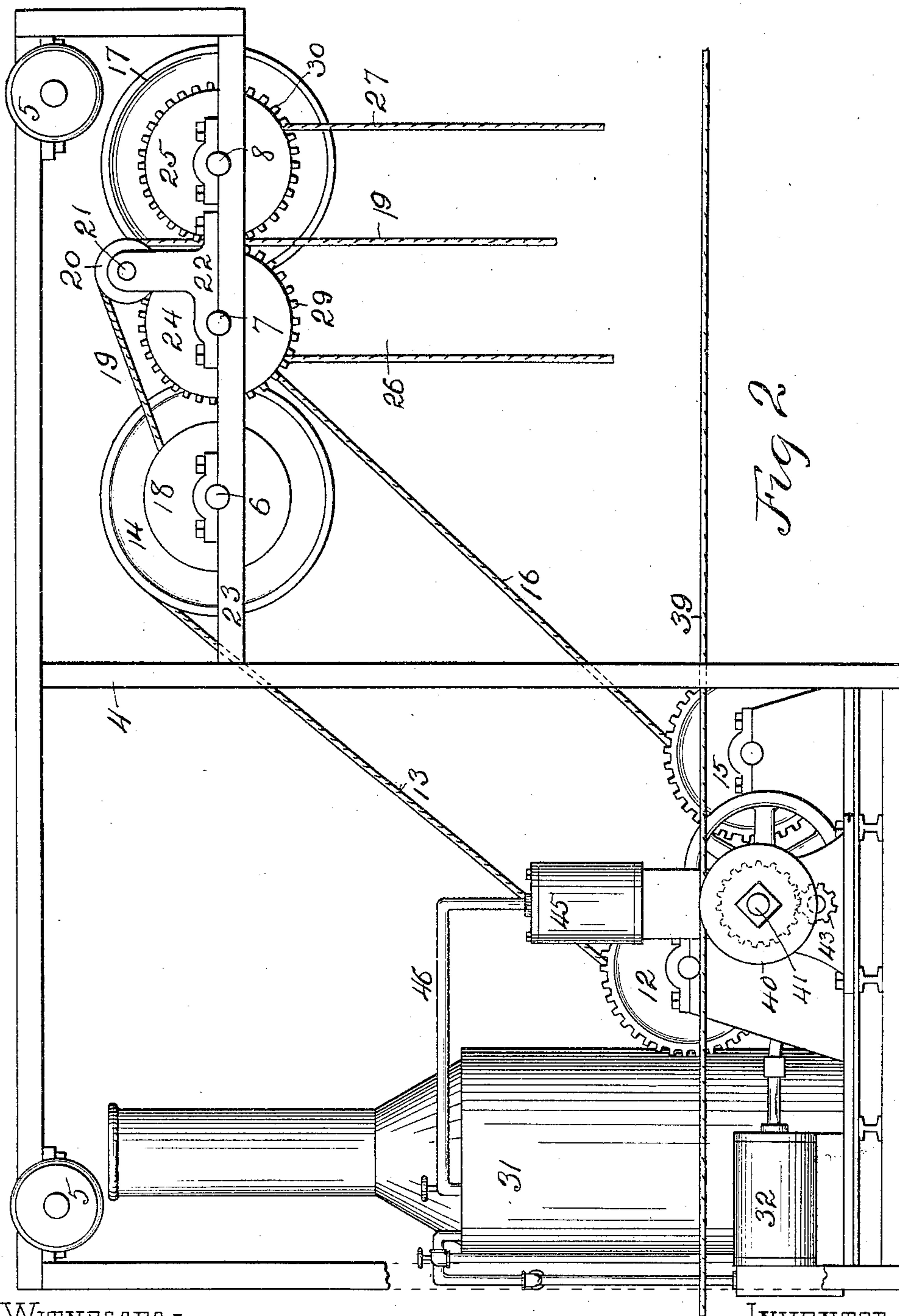
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5 SHEETS—SHEET 2.



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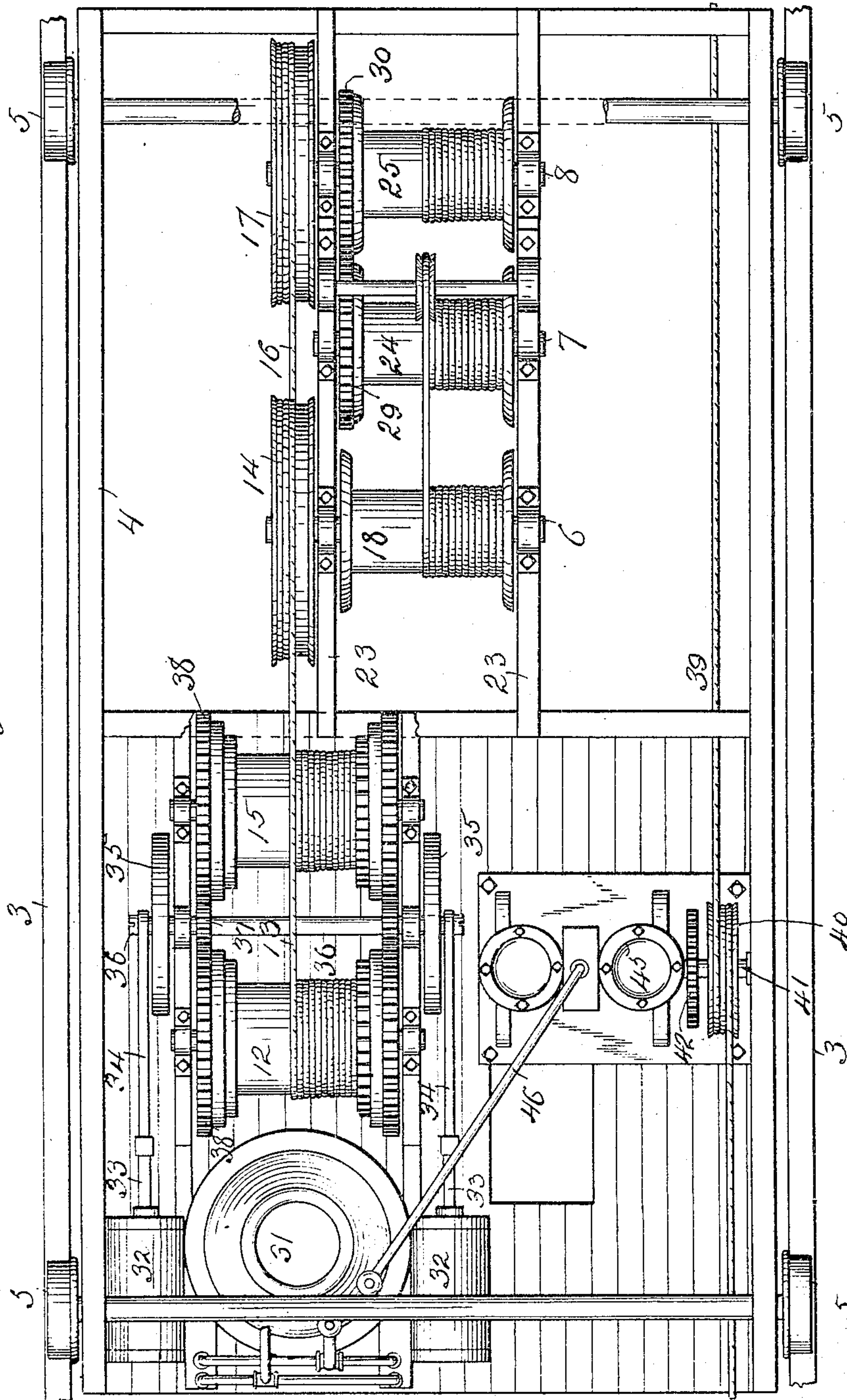
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5 SHEETS—SHEET 3.

Fig 3



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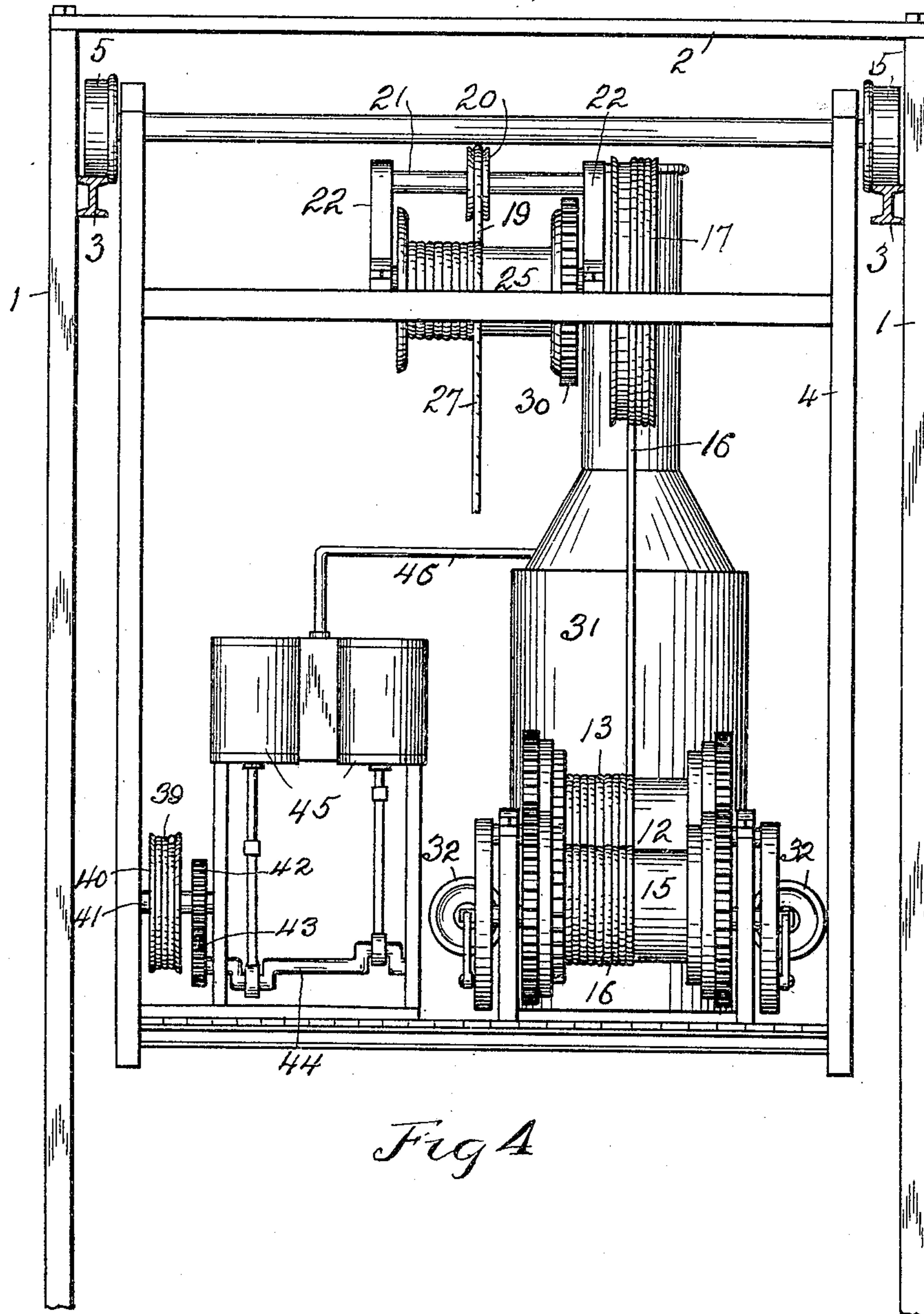


Fig 4

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5 SHEETS—SHEET 5.

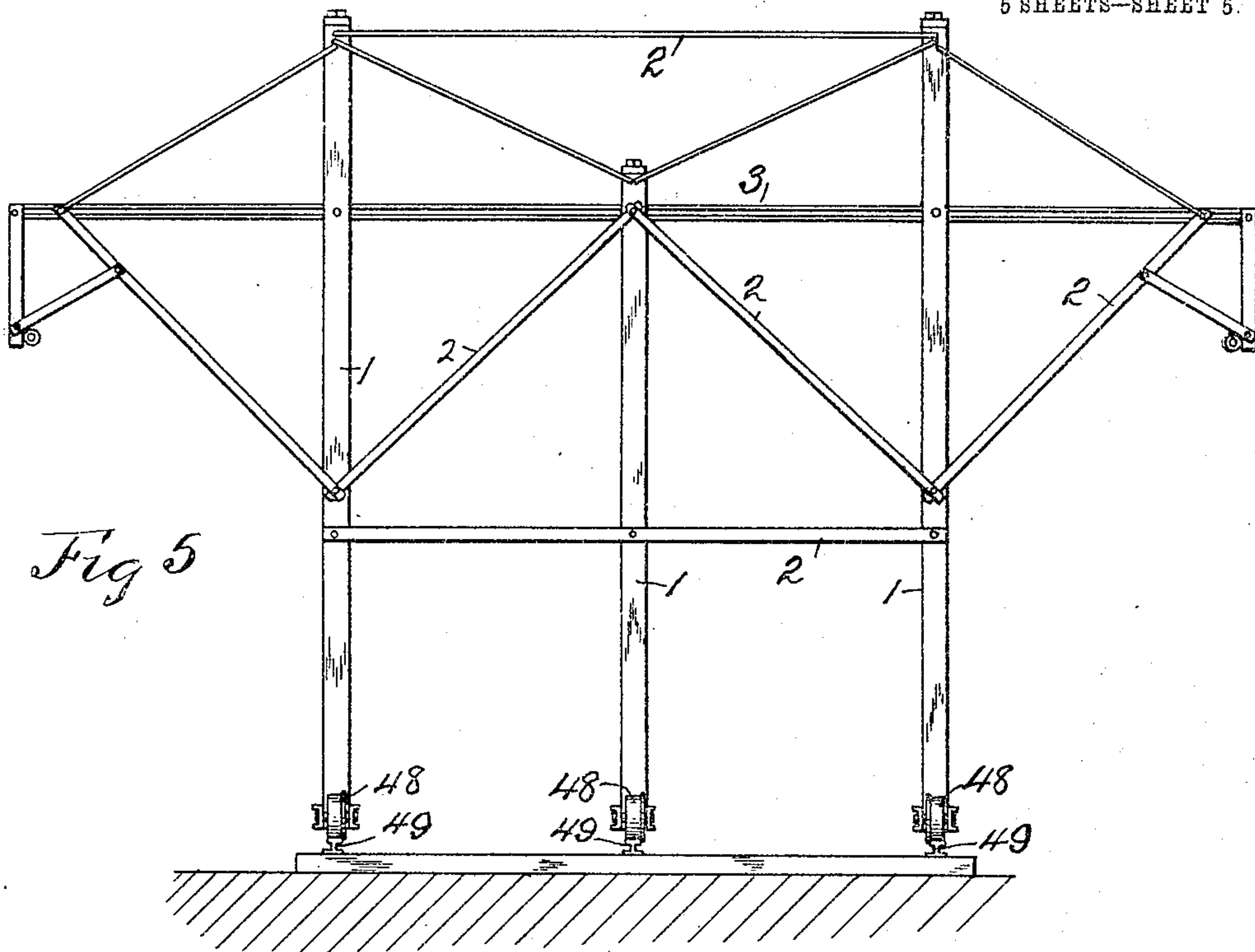
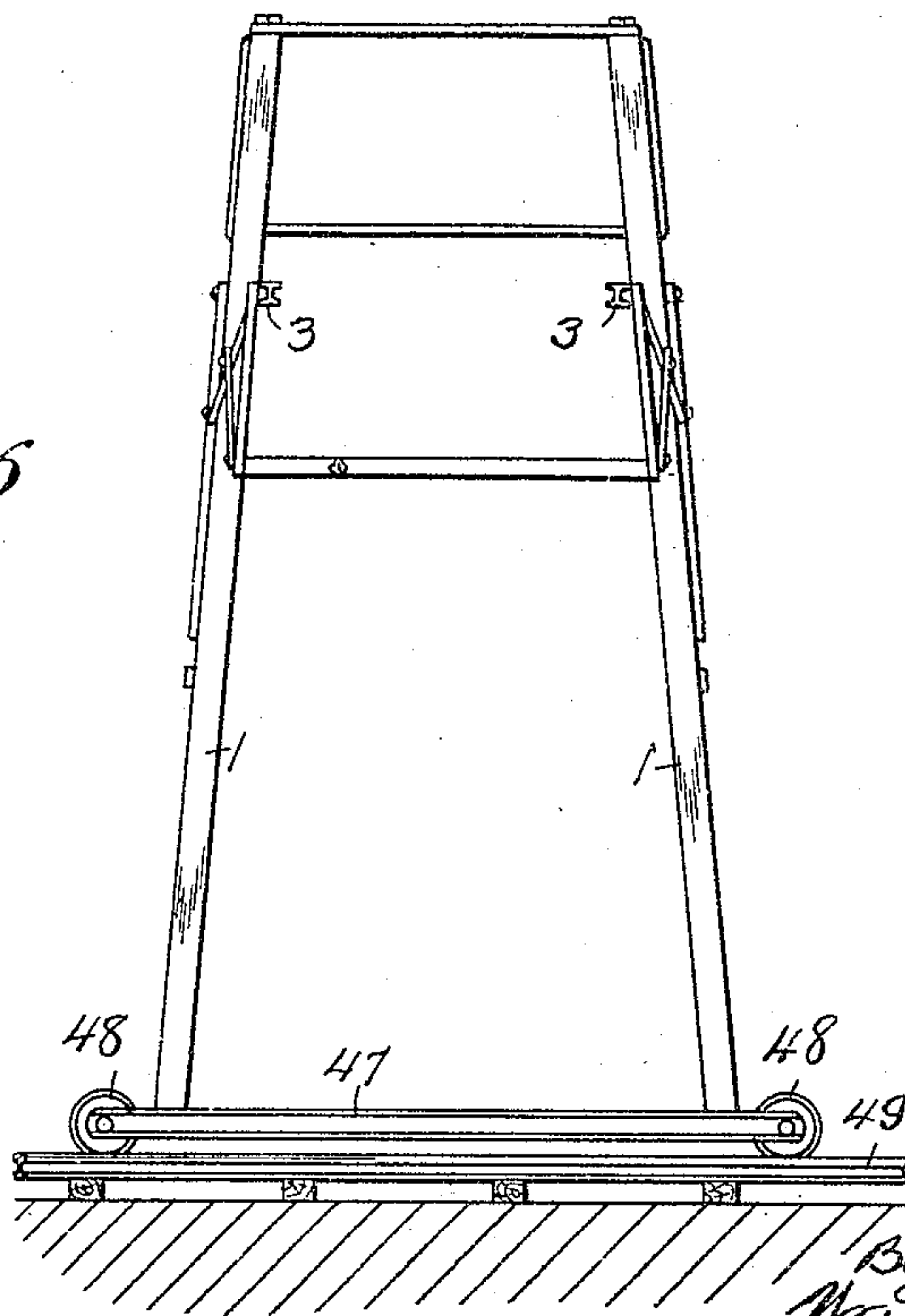


Fig 6



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UNITED STATES PATENT OFFICE.

MARCUS A. BOGIE, OF KANSAS CITY, MISSOURI.

TRAVELING DERRICK.

SPECIFICATION forming part of Letters Patent No. 792,115, dated June 13, 1905.

Application filed February 13, 1904. Renewed November 25, 1904. Serial No. 234,104.

To all whom it may concern:

Be it known that I, MARCUS A. BOGIE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented new and useful Improvements in Traveling Derricks, of which the following is a specification.

My invention relates to improvements in traveling derricks.

The object of my invention is to provide a traveling derrick comprising a framework having a track on which a car is movable to and fro, the car being provided with mechanism for hoisting an excavating device, such as the ordinary clam-shell, means being provided by which the car can be moved to and fro on the track, thus conveying the load carried by the clam-shell to the place where it is desired to dump the load carried thereby, the car being adapted to carry on it the operator who causes the load to be lifted and dumped and who controls the movement of the car forward and backward on the car.

My invention provides, further, certain novel means by which the car is moved forward and backward on the track. Further means are provided by which the entire framework can be moved laterally relative to the track mounted thereon, thus giving a wide range of territory on which the material picked up and dumped by the clam-shell may be distributed.

My invention provides, further, novel mechanism for operating the hoisting-ropes connected with the clam-shell.

Other novel features are hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation view of the entire derrick and parts connected therewith. In this form the framework is stationary. Fig. 2 is a side elevation view of the car and some of the parts connected therewith. Fig. 3 is a top view of what is shown in Fig. 2. Fig. 4 is an end elevation view of what is shown in Fig. 2. Fig. 5 is a side elevation view of a modified form of framework in which the framework is mounted on carrying-wheels adapted to run on transverse supporting-tracks by which the frame-

work of the derrick is moved laterally. Fig. 6 is an end elevation view of the framework shown in Fig. 5.

Similar characters of reference indicate similar parts.

The framework comprises the upright posts 1, connected together by the transverse bars 2. Supported on the vertical posts 1 are the horizontal rails 3 of the track, disposed longitudinally on the framework.

4 denotes the car, of any suitable construction, provided with carrying-wheels 5, mounted on the track-rails 3. Rotatively mounted on the framework of the car at any suitable places are three horizontal transverse shafts 6, 7, and 8, respectively, on which are mounted and rotatable therewith, respectively, the hoisting-drums 18, 24, and 25. On the car is also mounted a driving-drum 12, connected by a cable 13 with a driving-pulley 14, mounted on and rotatable with the shaft 6. On the car is also mounted a rotatable driving-drum 15, connected by a cable 16 with a driving-pulley 17, mounted on and rotatable with the shaft 8. Connected at one end to a hoisting-drum 18, mounted on and rotatable with the shaft 6, is a hoisting-cable 19, which passes over a pulley 20, supported on a horizontal shaft 21, mounted in vertical bearings 22, supported, respectively, upon the horizontal longitudinal bars 23, forming part of the framework of the car 4 and on which the shafts 6, 7, and 8 are rotatively mounted. On the shafts 7 and 8, respectively, are mounted rotatively therewith hoisting-drums 24 and 25, disposed, respectively, one at each side of the cable 19. Secured, respectively, to the drums 24 and 25 and adapted to be wound thereon are the hoisting-cables 26 and 27. The hoisting-cables 26, 27, and 19 are connected, respectively, at their lower ends to an ordinary excavating device 28, which may be of the clam-shell type and the particular construction of which not forming a part of this invention need not be described herein. Mounted on and rotatable with the drums 24 and 25 are two gears 29 and 30, the teeth of which intermesh and impart rotation from one drum to the other. The driving-drums 12 and 15 are rotated so as to wind thereon, respectively, the cables 13 and 16 by any suit-

able means. In the drawings I have shown a steam-boiler 31 mounted on the car 4 and supplying steam to the horizontal cylinder 32 of any suitable engine, the piston-rods 33 of which are connected by the connecting-bars 34 with the crank-disks 35, mounted, respectively, upon a rotatable shaft 36, on which is mounted a pinion 37, meshing, respectively, with two gears 38, connected in the ordinary manner to the drums 12 and 15. Upon rotating the drums 12 and 15, so as to wind thereon the cables 13 and 16, respectively, the driving-pulleys 14 and 17 will be rotated in a direction such that the cables 26, 19, and 27 will be wound, respectively, upon the drums 24, 18, and 25, respectively.

In operating the ordinary clam-shell the cables 26 and 27 constitute the closing-ropes by means of which the shovels of the clam-shell are made to close and pick up the load, the cable 19 being employed as the opening-rope, by means of which the load is dumped. When so used in raising a load, the drum 15 is first caused to rotate, the drum 12 being disposed so as to retain the cable 19 slackened. By rotating the drum 15 in the proper direction the cable 16, through the intermediacy of the pulley 17, shafts 7 and 8, and gears 29 and 30, rotates the hoisting-drums 24 and 25, so as to wind thereon the cables 26 and 27, thus closing and hoisting the clam-shell 28. To dump or to lower the clam-shell, the drum 12 is so rotated as to wind the cable 19 on the drum 18, the cables 26 and 27 being permitted to slacken. To move the car forward and backward upon the framework, I provide a horizontal longitudinal cable 39, the ends of which are secured, respectively, to the framework 1 adjacent to its opposite ends. This cable 39 is wound around a drum 40, rotatively mounted on a horizontal shaft 41, rotatively mounted in the framework of the car and having rotatable therewith a pinion 42, which meshes with a pinion 43, rotatable with the crank-shaft 44 of any ordinary upright steam-engine 45, which receives its steam by means of a pipe 46 from a boiler 31. By running the engine 45 in the proper direction the drum 40 may be rotated so as to wind on the drum the portion of the cable 39 extending toward one end of the framework and unwinding from the drum the portion extending toward the other end of the framework. This rotation of the drum 40 will cause movement lengthwise on the framework of the car 4 in one direction. By rotating the drum in the opposite direction the car may be oppositely moved. In the form of my invention shown in Figs. 5 and 6 the upright pillars or posts 1 are mounted upon transverse horizontal bars 47, which form part of the framework and to the respective ends of which are pivoted carrying-wheels 48, disposed transversely to the track-rails 3 and mounted upon transverse supporting-rails 49. The frame-

work may be moved laterally to any desired point by means of the carrying-wheels 48 and the track-rails 49.

In operating my invention the engine 45 is run so as to rotate the drum 40 in a direction such that the car 4 will be moved toward the end of the framework where it is desired to lower the clam-shell 28 and pick up a load. The clam-shell 28 is then permitted to descend by its own weight, the drums 12 and 15 being so operated that the cable 19 will support the clam-shell. The load is then picked up and elevated by rotating the drum 15 in a direction such that the cables 26 and 27 will take up the load, the drum 12 being also rotated, so as to wind thereon the cable 13, but not fast enough to throw the weight upon the cable 19. When the clam-shell has been sufficiently elevated, the engine 45 is driven, so as to rotate the drum 40, which is the propelling-drum, so that the cable 39 will be wound thereon and unwound therefrom, so as to move the car 4 toward the other end of the framework. When the clam-shell 28 has reached the position desired to unload it, it is dumped in the manner already described, after which the car is moved to the other end of the framework and the operation repeated. When it is desired to change the place of dumping laterally, the framework is moved by any convenient power by means of the carrying-wheels 48 and rails 49 to the desired position.

Various modifications of my invention may be resorted to without departing from its spirit.

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

1. The combination with a supporting-framework provided with a longitudinal track, of a car movable forward and backward on said track, two hoisting-drums rotatively mounted on said car, a pulley rotatively mounted on the car, a third drum rotatively mounted on the car and rotatable independently of the other two drums, gearing for imparting rotation from one to the other of the first two drums, a cable connected with the third drum and passing over said pulley between the other two drums, cables connected respectively one to each of the first two drums, means carried by the car for rotating said drums in directions suitable for winding thereon respectively the said cables, means connecting the car and the framework by which the car is moved longitudinally along the track, and a supporting-track on which the framework is moved transversely relative to the track carried by the framework.

2. The combination with a supporting-framework provided with a longitudinal track, of a car movable forward and backward on said track, two driving-drums rotatively mounted upon the car, means for rotating said drums,

a plurality of shafts rotatively mounted upon the car, two driving-pulleys disposed respectively upon two of said shafts, driving-cables connecting respectively the driving-drums 5 and the two said driving-pulleys, a plurality of drums mounted one on each of said shafts and rotatable therewith, gearing connecting two of said drums, hoisting-cables connected one to each of the drums mounted on said 10 shafts, and means for moving the car forward and backward upon the track.

3. The combination with a supporting-framework provided with a longitudinal track, of a car movable forward and backward on said 15 track, two driving-drums rotatively mounted on said car, means for rotating said drums, a plurality of shafts rotatively mounted upon the car, two driving-pulleys disposed respectively upon two of said shafts, driving-cables 20 connecting respectively the driving-drums and the two said driving-pulleys, a plurality of hoisting-drums mounted one on each of said shafts and rotatable therewith, gearing connecting two of said drums, hoisting-cables connected one to each of the hoisting-drums, a 25 cable having its ends secured to and disposed lengthwise of the framework, a propelling-drum rotatively mounted on said car and around which the last-named cable is wound, 30 and means for rotating said propelling-drum in opposite directions.

4. The combination with a supporting-framework provided with a longitudinal track, and having carrying-wheels disposed transversely to said track and upon which the frame- 35 work is laterally movable, of a car movable forward and backward on said track, two driving-drums rotatively mounted on the car, means for rotating said drums, a plurality of shafts rotatively mounted on the car, two 40 driving-pulleys disposed respectively upon two of said shafts, driving-cables connecting respectively the driving-drums and the two said driving-pulleys, a plurality of hoisting- 45 drums mounted one on each of said shafts and rotatable therewith, gearing connecting two of said hoisting-drums, hoisting-cables connected one to each of the drums mounted on said shafts, a propelling-cable having its ends 50 secured to and disposed lengthwise of the said framework, a propelling-drum rotatively mounted on the car and engaging said propelling-cable, and means for rotating the propelling-drum in opposite directions.

In testimony whereof I have signed my name 55 to this specification in the presence of two subscribing witnesses.

MARCUS A. BOGIE.

Witnesses:

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