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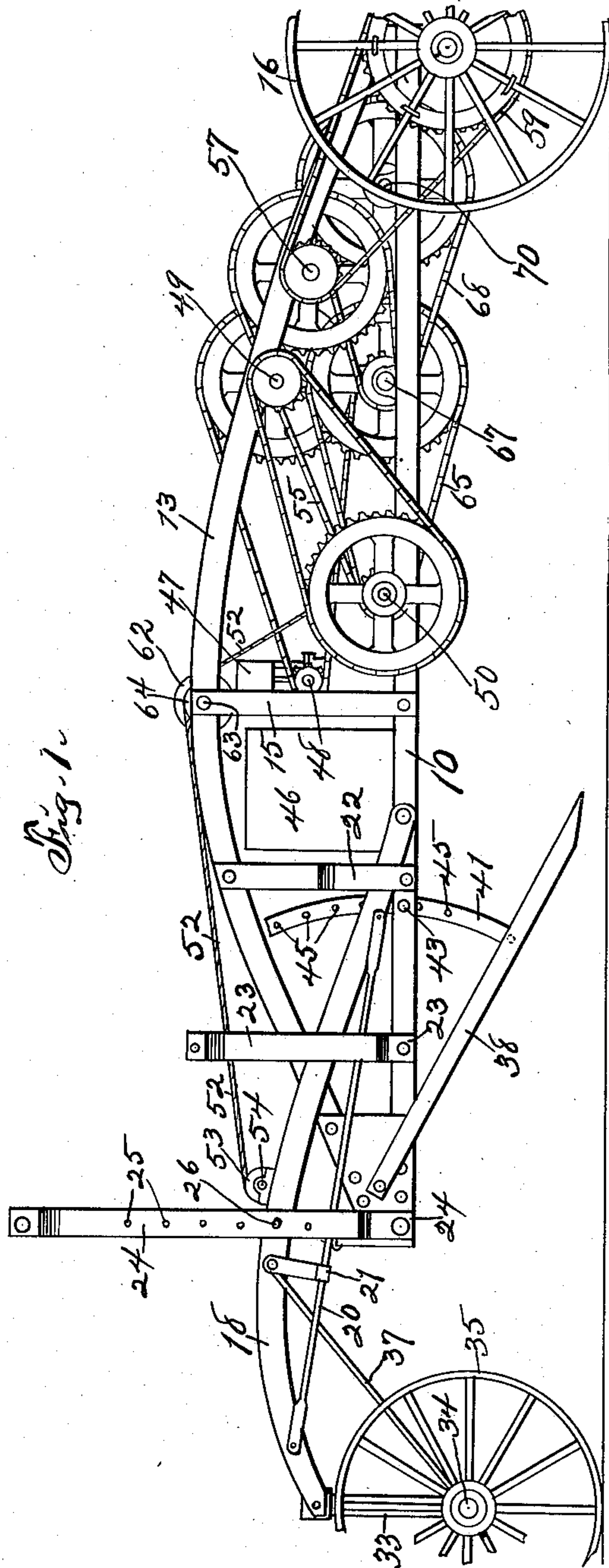
PATENTED MAR. 10, 1908.

H. M. FISK.

TRAVELING CAPSTAN.

APPLICATION FILED MAY 23, 1907.

4 SHEETS—SHEET 1.



Witnesses:  
R. H. Orwig.  
H. Anderson.

Inventor: Henry M. Fisk,  
By Thomas G. Orwig & Co. Attorneys.

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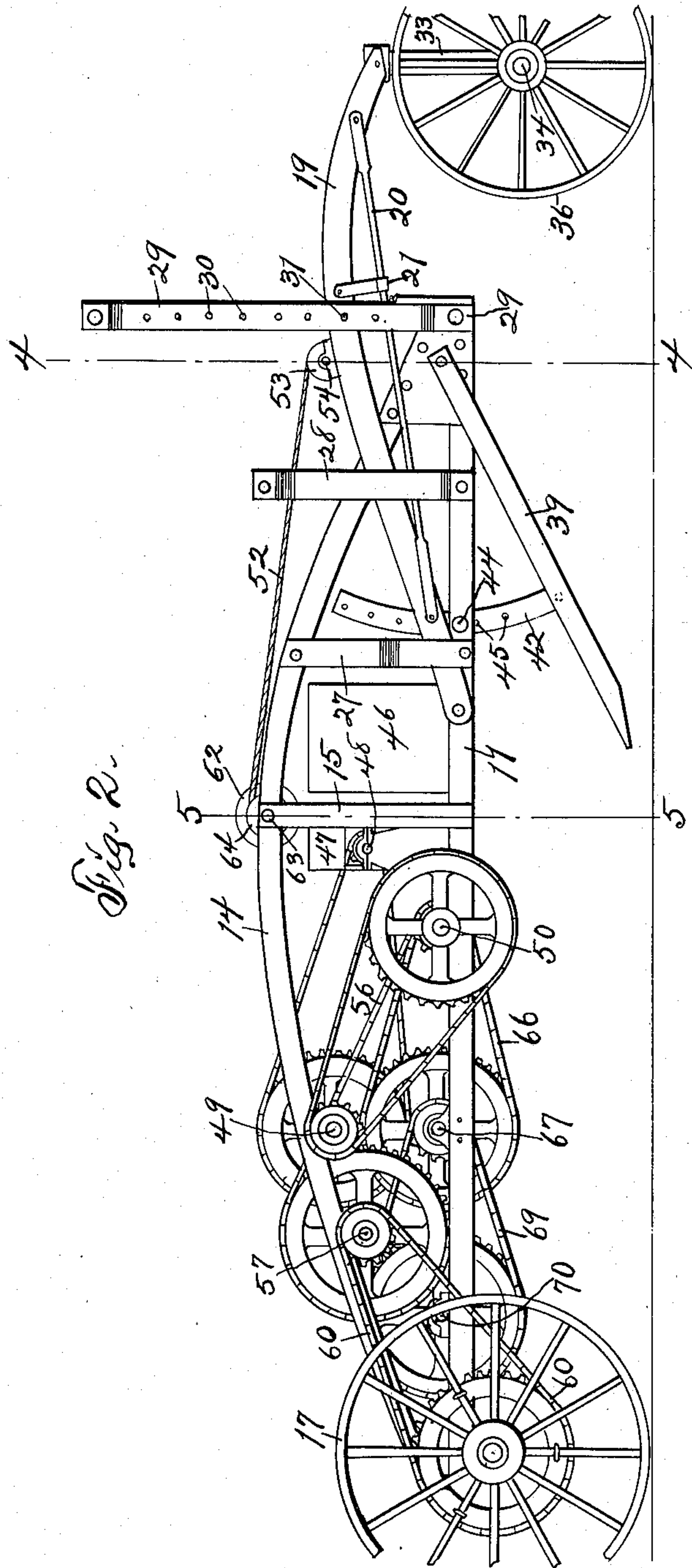
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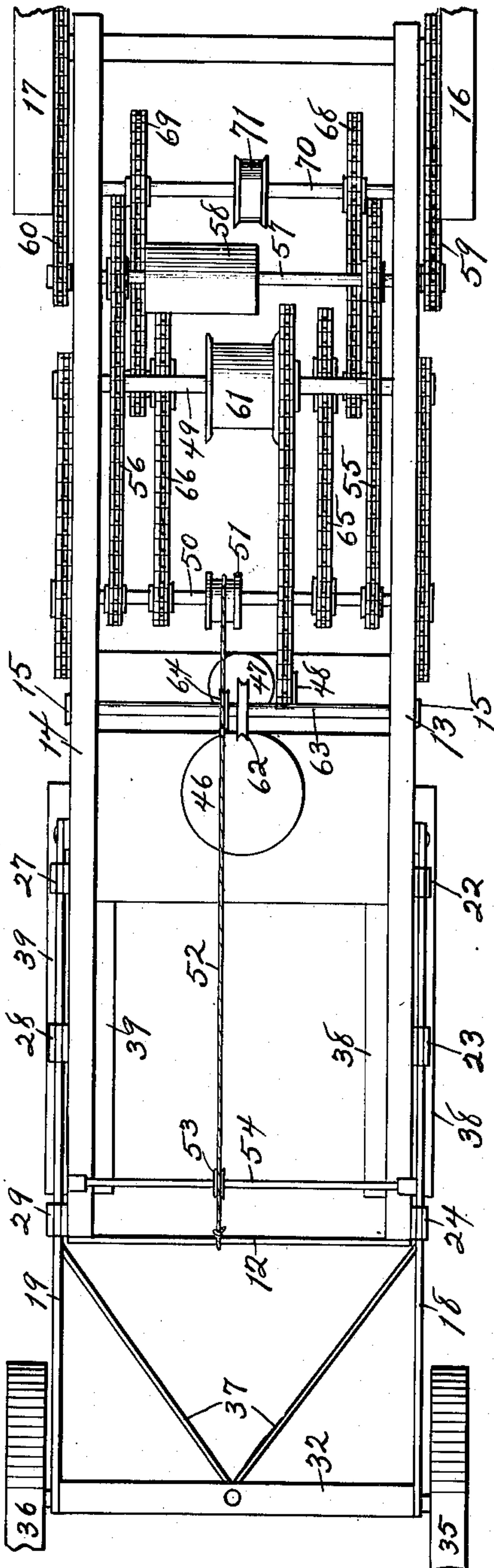
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4 SHEETS—SHEET 3.

Fig. 3-



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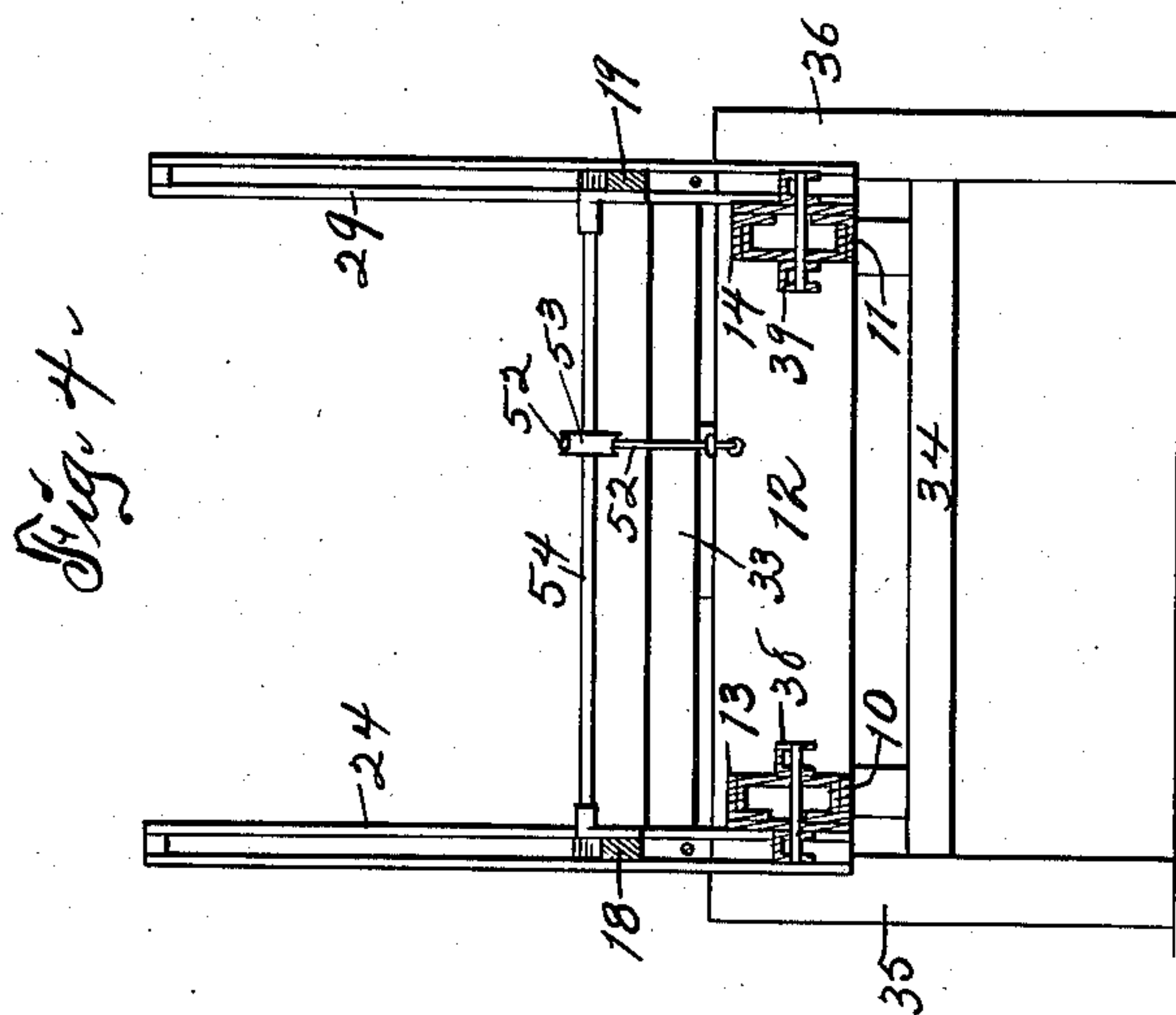
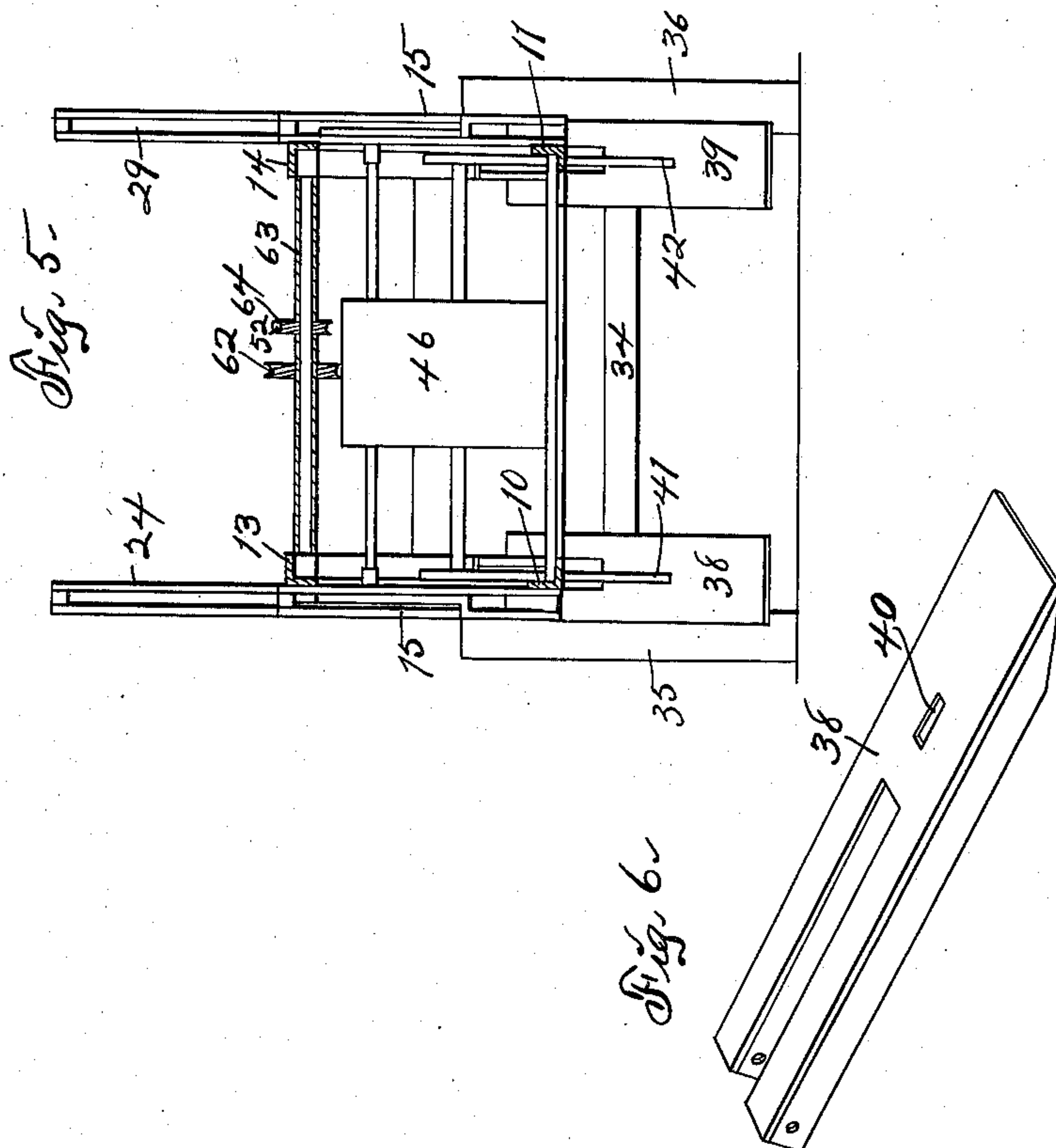
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4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

HENRY M. FISK, OF PELLA, IOWA.

## TRAVELING CAPSTAN.

No. 881,568.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed May 23, 1907: Serial No. 375,369.

*To all whom it may concern:*

Be it known that I, HENRY M. FISK, a citizen of the United States, residing at Pella, in the county of Marion and State of Iowa, have invented a new and useful Improvement in Traveling Capstans, of which the following is a specification.

The object of this invention is to provide an improved construction for traveling capstans.

A further object of this invention is to provide improved means for raising and lowering the anchor of a traveling capstan.

A further object of this invention is to provide improved adjusting means whereby a portion of a traveling capstan intermediate of the supporting wheels thereof may be raised and lowered.

Further objects of my invention will appear in the following description.

My invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in my claims and illustrated by the accompanying drawing, in which—

Figure 1 is a side elevation of the machine in position for transportation. Fig. 2 is an opposite side elevation of the machine in like position. Fig. 3 is a plan of the machine. Fig. 4 is a cross-section on the indicated line 4—4 of Fig. 2. Fig. 5 is a cross-section on the indicated line 5—5 of Fig. 2. Fig. 6 is a perspective of one of the anchors employed in the machine.

In the construction of the machine as shown the numerals 10, 11 designate side bars of a main frame, which side bars are connected by any desired number of cross bars 12. Arches or trusses 13, 14 are fixed at their ends to the ends of the side bars 10, 11 and are sprung above said side bars. The side bars 10, 11 and arches or trusses are connected by any desired number of struts 15. The rear end portions of the side bars 10, 11 are carried by supporting traction wheels 16, 17. Hounds 18, 19 are pivoted at their rear ends on the side bars 10, 11 at alining points considerably to the rear of the forward ends of said side bars. Each hound is arched upward and is braced by a truss rod 20 and any desired number of struts 21. Guides 22, 23, 24, each formed of parallel bars connected at their upper and lower ends, are fixed to and rise from the side bar 10 and receive and embrace the hound 18. The guide 22 is also fixed at its upper end to the arch or truss 13.

The guide 24 is of materially greater height than the other guides and is provided with a plurality of holes adapted to receive a bolt 26, which bolt also extends through the hound 18 and connects said hound adjustably to the guide. The guide 24 preferably is pivoted at its lower end on the side bar 10 to provide a flexibility for purpose of adjustment of the parts connected thereby.

Guides 27, 28, 29, each formed of parallel bars connected at their upper and lower ends, are fixed to and rise from the side bar 11 and receive and embrace the hound 19. The guide 27 also is fixed at its upper end to the arch or truss 14. The guide 29 is of the same height as the guide 24 and also is provided with a plurality of holes 30 adapted to receive a bolt 31, which bolt also extends through the hound 19 and connects said hound adjustably to the guide. The guide 29 preferably is pivoted at its lower end on the side bar 11 to provide a flexibility of the parts connected thereby. The guides 24 and 29 may be braced together across the machine in any desired manner. The forward end portions of the hounds 18, 19 are connected by a cross bar 32 and said cross bar is carried by and pivoted to a bolster 33. The bolster 33 is carried by an axle 34, and said axle in turn is carried by guiding supporting wheels 35, 36. The central portion of the bolster and axle is connected by braces 37 to the hounds 18, 19. Anchors 38, 39 are provided and are bifurcated in their upper ends and beveled under at their lower ends. The bifurcated upper ends of the anchors 38, 39 straddle and are pivoted to the forward ends of the side bars 10, 11. The anchors incline downward and rearward from their pivots and are formed with slots 40 near their lower ends. Links 41, 42, curved throughout their lengths, are inserted and pivoted at their lower ends in the slots 40 of the anchors 38, 39. The links 41, 42 extend upward from the anchors through slots (not shown) in the side bars 10, 11 and are secured by bolts or pins 43, 44 mounted through said side bars and through one or another of holes 45 in the links. A boiler 46 and an engine 47 are mounted on the main frame. The shaft 48 of the engine is connected by sprocket gearing to a shaft 49 journaled to the trusses 13, 14. The shaft 49 is connected by sprocket gearing at each end to a shaft 50 journaled to the side bars 10, 11. A drum 51 is fixed to the central portion of the shaft 50.



and a cable 52 is fixed at its rear end to and is adapted to be wound on said drum. The bight of the cable 52 extends over a sheave 53 on a shaft 54 journaled to the hounds 18, 19, and the forward end of said cable is fixed to the central portion of the forward cross bar 12 of the main frame. The shaft 50 is connected by duplicate sprocket gearings 55, 56 to a shaft 57 journaled to the trusses 13, 14 and a differential gear device, shown conventionally at 58, is provided at the center of the latter shaft intermediate of said gears. The differential shaft 57 is connected by duplicate sprocket gearing 59, 60 at its ends to the supporting traction wheels 16, 17. The shaft 49 is provided with a drum 61 intermediate of its ends and a sheave 62 loosely mounted on a shaft 63 journaled to the trusses 13, 14, is in line with and in front of said drum. The cable 52 also runs over a sheave 64 loosely mounted on the shaft 63. The shaft 50 also is connected by duplicate sprocket gearing 65, 66 to a counter shaft 67 journaled to the side bars 10, 11, and the counter shaft is connected by duplicate sprocket gearing 68, 69 to a shaft 70 also journaled to the side bars. A drum 71 is mounted on the central portion of the shaft 70. The several sprocket gearings may be provided with clutch connections to their driving shafts in order that they may be operated independently or conjunctively as desired. Any desired steering mechanism may be applied to the bolster 33 and axle 37, to turn said bolster and axle on their vertical pivot as required to give direction to the machine.

Any desired form of gearing, such as spur gearing or screw gearing may be substituted for the sprocket gearing shown and described.

In practical operation of the machine, the parts being in the positions shown, the machine can be advanced on a roadway or across a field by driving the engine with connections to the traction wheels 16, 17 by way of the shafts 48, 49, and 50, the sprocket gearing 55, 56, the differential shaft 57, the sprocket gearing 59 and 60. This connection may be unclutched and the machine be advanced across a swamp or marshy surface, where the traction is not sufficient to move it, by attaching one end portion of a cable (not shown) to the drum 61 and extending said cable over the sheave 62 and forwardly to attachment to an anchor (not shown) in advance of the machine. Then the drum 61 may be driven by the engine through the shafts 48 and 49 to the end of winding the cable on the drum and advancing the machine.

When the machine has reached the desired location, it may be anchored as follows: The anchors 38, 39 are set at the desired angle by adjustment of the bolts or pins 43, 44 in the desired holes 45; the bolts

26 and 31 are withdrawn; the forward portion of the main frame and load carried thereby is lowered under control of the cable 52 governed by the gearing through which it is connected to the engine; the cable (not shown) is detached from the drum 61 and attached at one end to the drum 71 and at the other end to the load to be drawn, such as a ditching machine; and the drum 71 is driven by the shafts 48, 49 and 50, the sprocket gearing 65, 66, the shaft 67, the sprocket gearing 68, 69 and the shaft 70, to the end of winding said cable on said drum. The strain of the cable (not shown) winding on the drum 71 moves the machine rearward and causes the anchors 38, 39 to enter and engage the soil on which the machine rests and pulls the forward portion of the main frame downward so that the forward cross bar 12 engages the ground or even enters it. When the anchors 38, 39 have perfectly engaged the soil, the bolts or pins 26, 31 may be replaced to connect the main frame inflexibly to the hounds. Thereafter the strain of the cable (not shown) is exercised in drawing the load, such as a ditching machine, toward the capstan machine. When the load has been advanced into contiguity to the capstan the connection between them is detached by unclutching one or the other of the gears, the drum 51 is rotated to wind the cable 52 on the drum and lift the forward end portion of the main frame relative to the hounds and release the anchors from the ground. At the same time the capstan machine may be advanced either by use of the traction devices or by connection to an anchor in front as described to aid in releasing the anchors 38, 39 from the soil. Or, the bolts or pins 43, 44 may be removed, thus permitting the anchors 38, 39 to swing clear and draw lengthwise out of the soil during the elevation of the forward end of the main frame. It is to be understood that the bolts or pins 26, 31 are removed during the operation of lifting the forward end portion of the main frame, and are replaced to sustain the frame at the desired elevation relative to the hounds when the machine is transported.

I claim as my invention—

1. A traveling capstan, comprising a frame, wheels supporting one end of said frame, hounds pivotally connected to said frame, locking connections between said frame and hounds, wheels supporting the forward ends of the hounds, and anchors carried by said frame.

2. A traveling capstan, comprising a frame, wheels supporting one end of said frame, hounds pivoted at their rear ends intermediate of the ends of the frame, adjustable connections between said frame and hounds intermediate of the ends of the hounds, a bolster carrying the forward ends



of the hounds, wheels carrying said bolster, and anchors carried by the frame.

3. A traveling capstan, comprising a frame, guides on one end thereof, hounds extending through said guides and pivoted at the rear thereof to said frame, pins removably and replaceably connecting said hounds and frame auxiliary to the pivots, wheels supporting the rear end of the frame, wheels supporting the forward ends of the hounds, and anchors carried by said frame.

4. A traveling capstan, comprising a jointed frame constructed to flex intermediate of its ends, wheels supporting end portions of said frame, a motor on the frame, cable and windlass mechanism between said motor and frame for governing the flexing of the frame, and anchors carried by said frame.

5. In a traveling capstan, a trussed frame, a motor and gearing thereon, traction wheels supporting the rear end of said frame, said traction wheels geared to said motor, trussed hounds pivoted at their rear ends to the frame at the rear of the front end of said frame, a sheave on said hounds, a cable at-

tached to the front end of the frame and carried by said sheave, a drum in the gearing to which the opposite end of said cable is attached, steering wheels supporting the forward ends of the hounds, and anchors carried by said frame.

6. In a traveling capstan, a trussed frame, a motor thereon, traction wheels supporting the rear end of said frame and geared to said motor, a drum on said frame and geared to said motor, guides rising from the forward end of said frame, hounds extending through said guides and pivoted at their rear ends to said frame, pins detachably connecting said guides and hounds, a steering truck carrying the forward ends of the hounds, a cable connecting the front end of the frame to said drum, a sheave carried by the hounds and supporting the bight of said cable, and anchors carried by said frame.

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Witnesses:

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