No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 1.

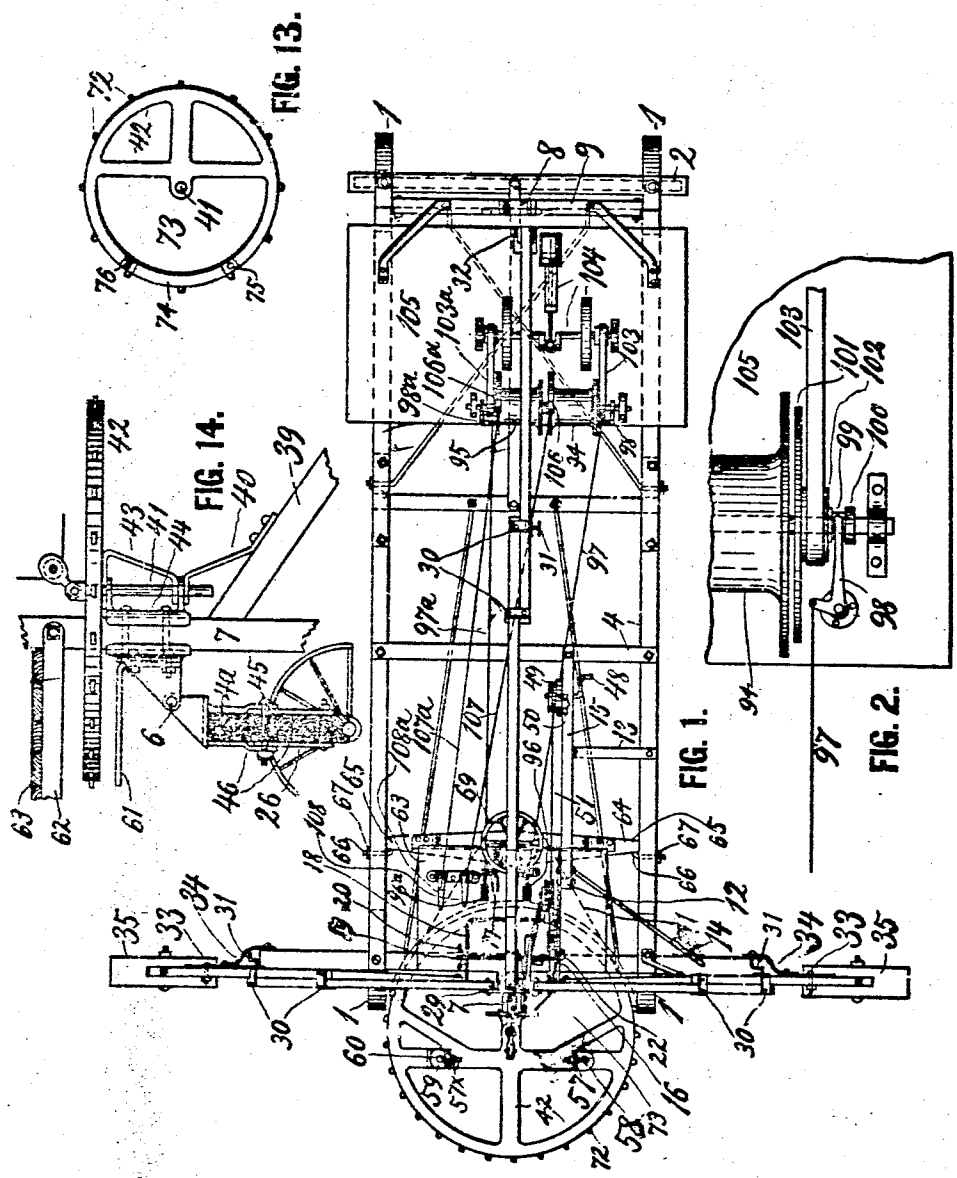

FIG. 13.

FIG. 14.

FIG. 1.

FIG. 2.

WITNESSES:

D. E. Carlsen

W. K. Carlsen

INVENTOR

Nels H. Nelson.

BY his ATTORNEY:

A. M. Carlsen.

No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 2.

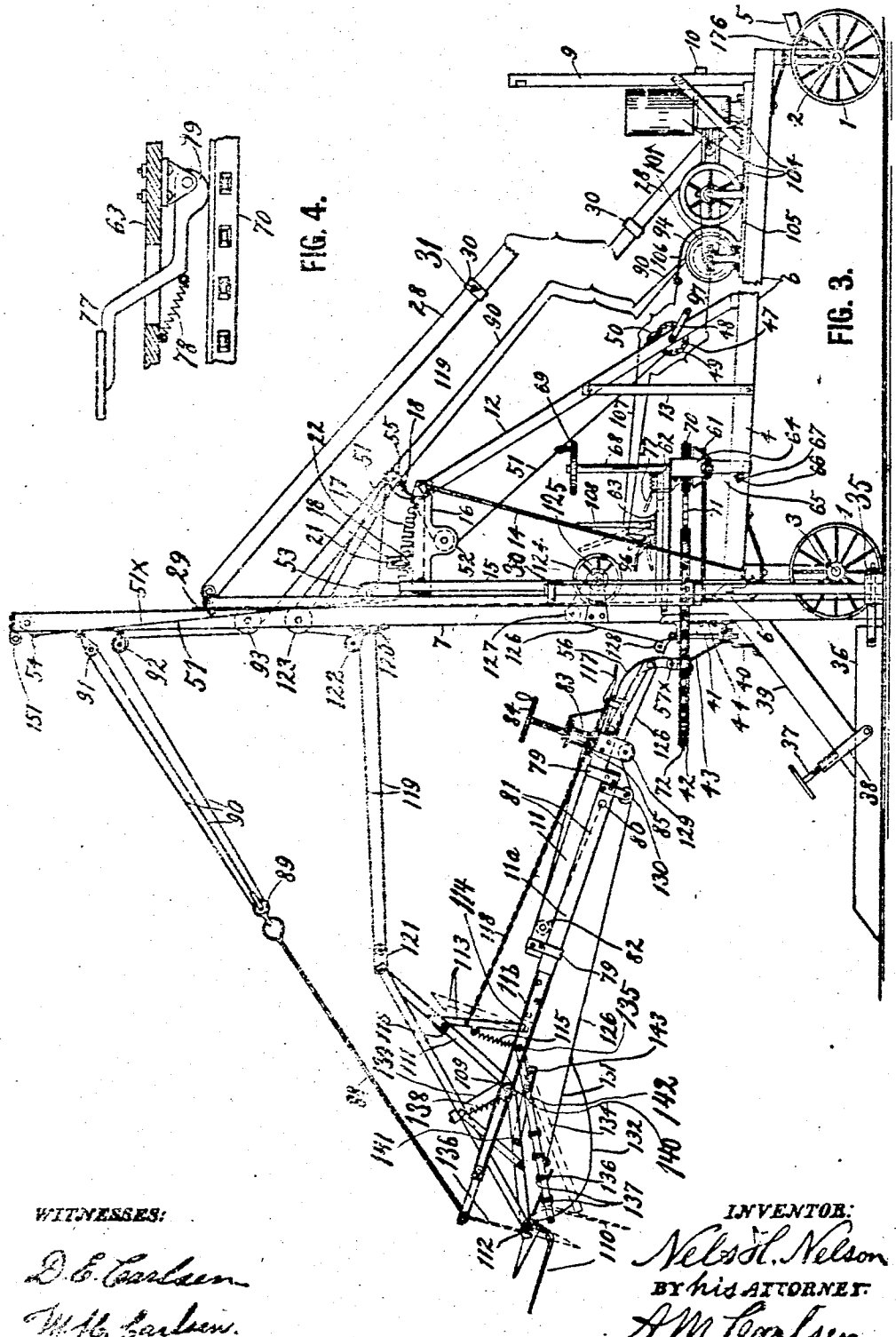

FIG. 3.

FIG. 4.

WITNESSES:

D. E. Carlsen

W. H. Carlsen.

INVENTOR:

Nels H. Nelson

BY his ATTORNEY:

A. M. Carlsen.

No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 3.

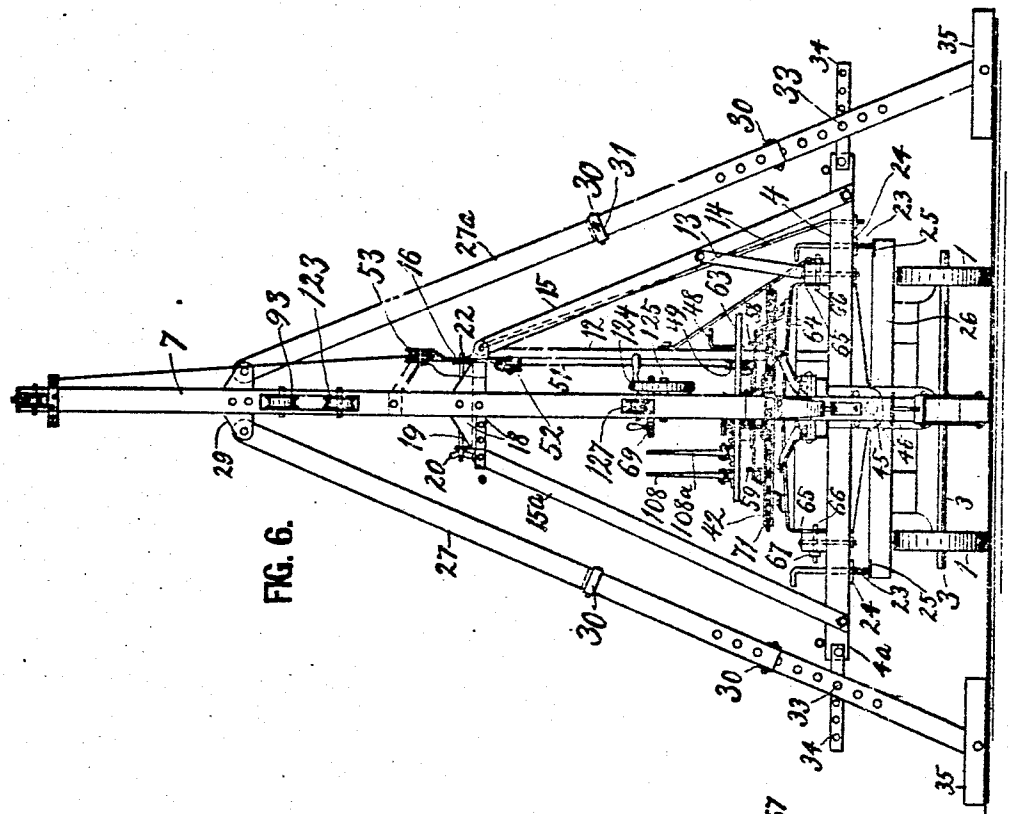

FIG. 6.

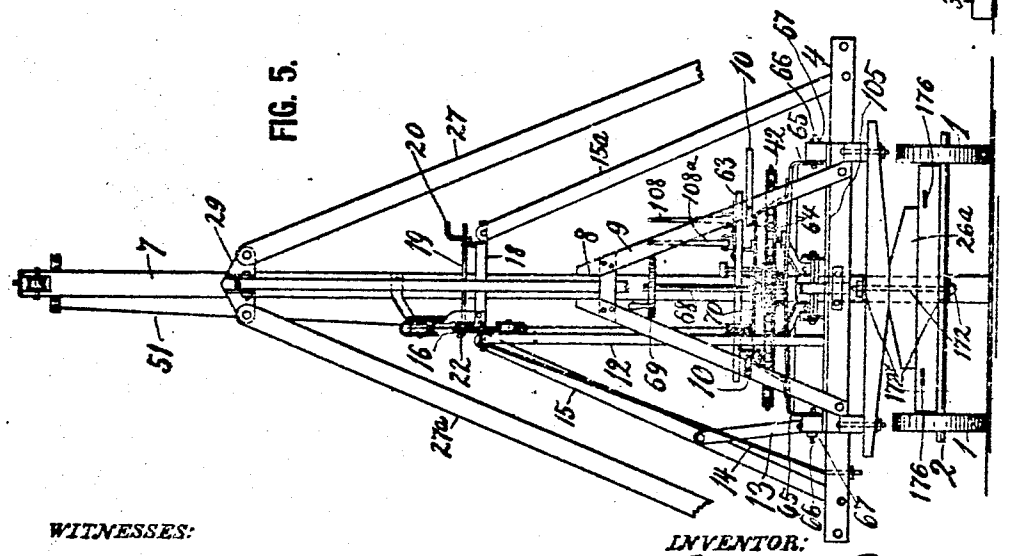

FIG. 5.

WITNESSES:

D. E. Carlsen

W. H. Carlsen.

INVENTOR:

Nels H. Nelson.

BY his ATTORNEY:

A. M. Carlsen.

No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 4.

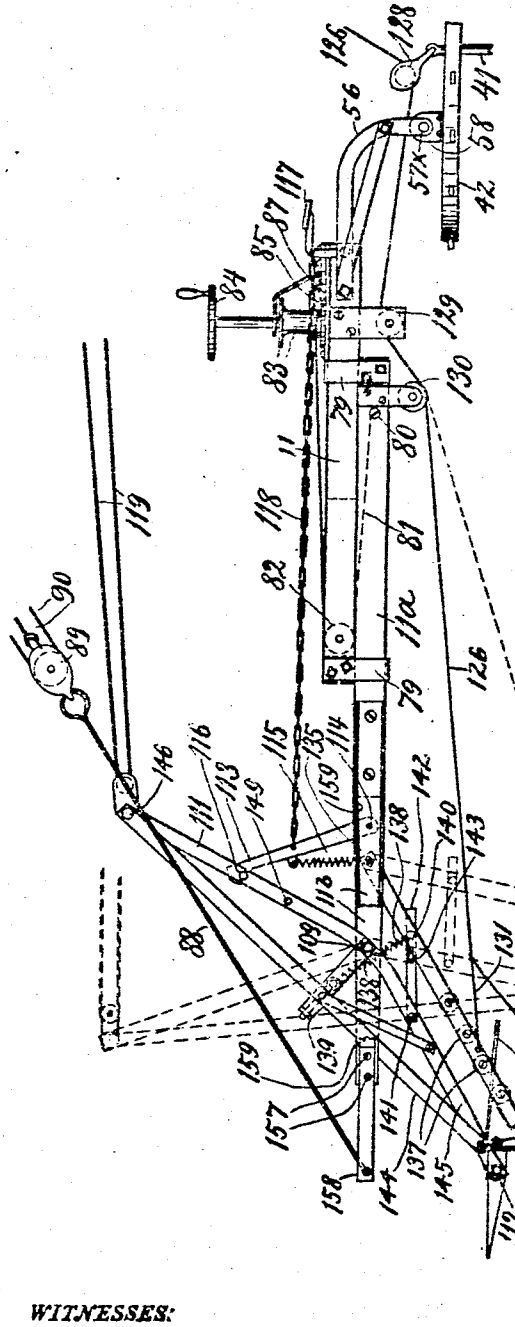

FIG. 8.

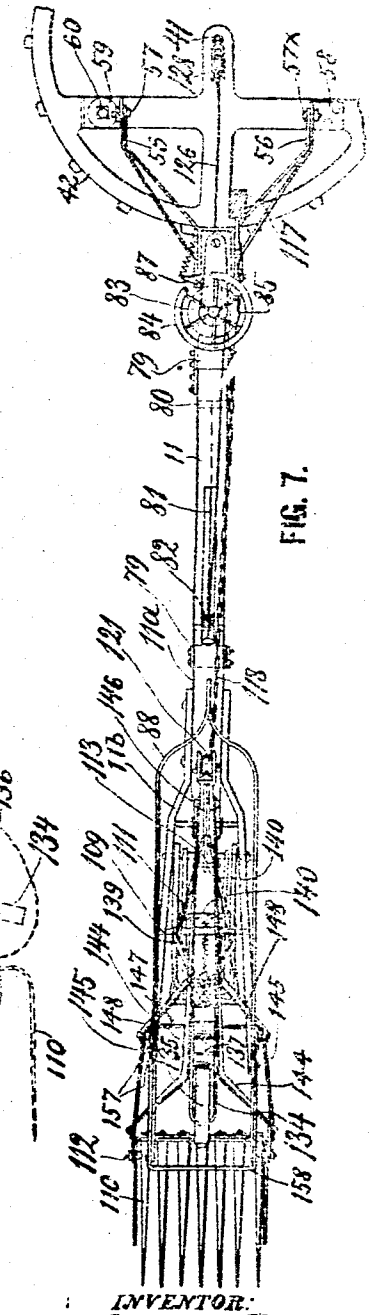

FIG. 7.

WITNESSES:

D. E. Carlsen

W. H. Carlsen

INVENTOR:

Nels H. Nelson.

BY his ATTORNEY:

A. M. Carlsen

No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 5.

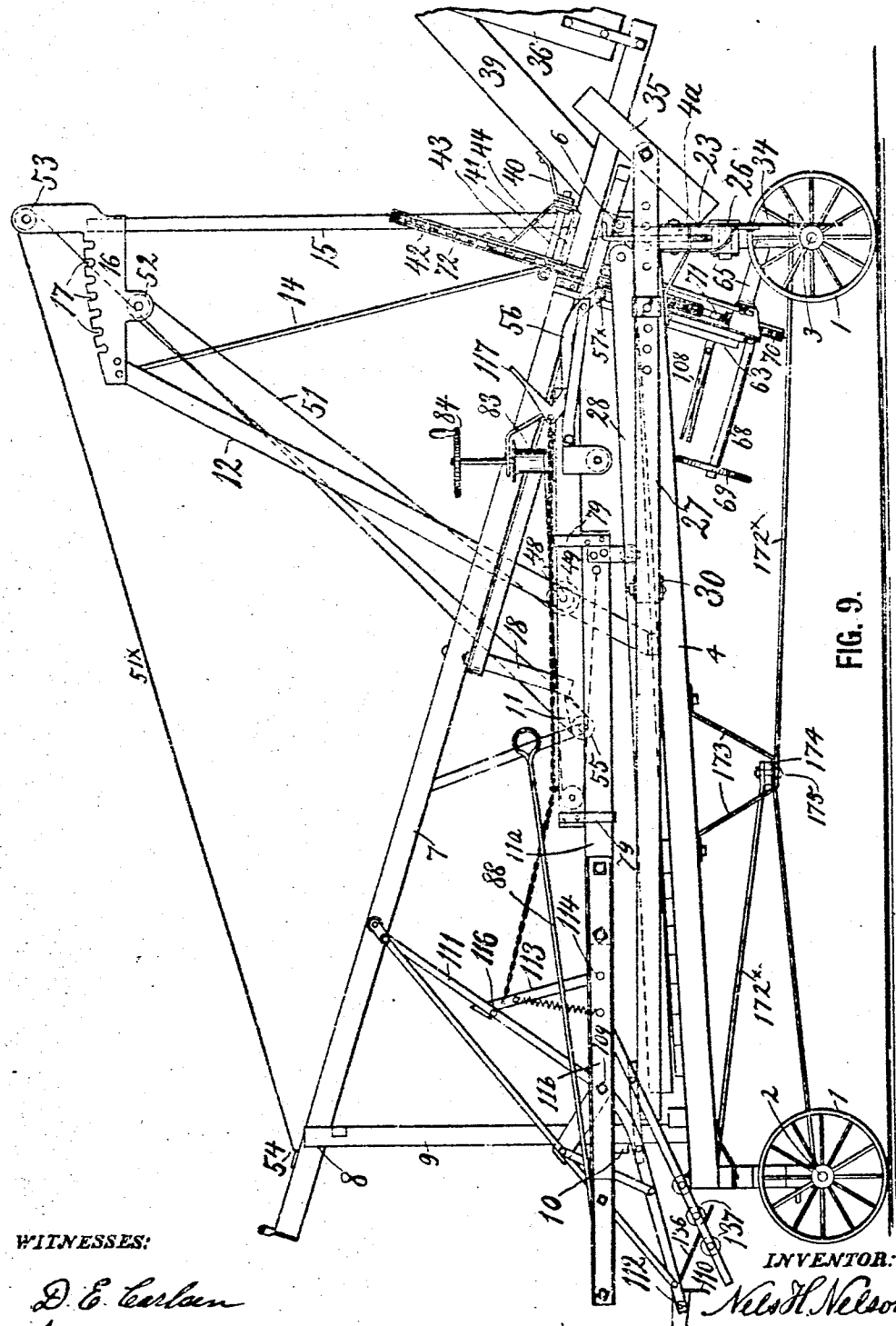

FIG. 9.

WITNESSES:

D. E. Carlsen

A. M. Carlsen.

INVENTOR:

Niels H. Nelson.

BY his ATTORNEY: A. M. Carlsen.

No. 880,814. PATENTED MAR. 3, 1908.

N. H. NELSON.

DIGGING AND LOADING MACHINE.

APPLICATION FILED APR. 25, 1907.

6 SHEETS—SHEET 6.

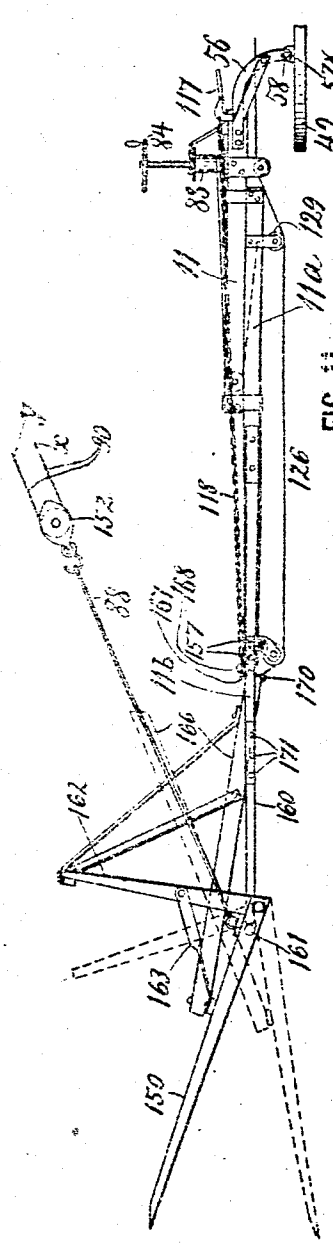

FIG. 11.

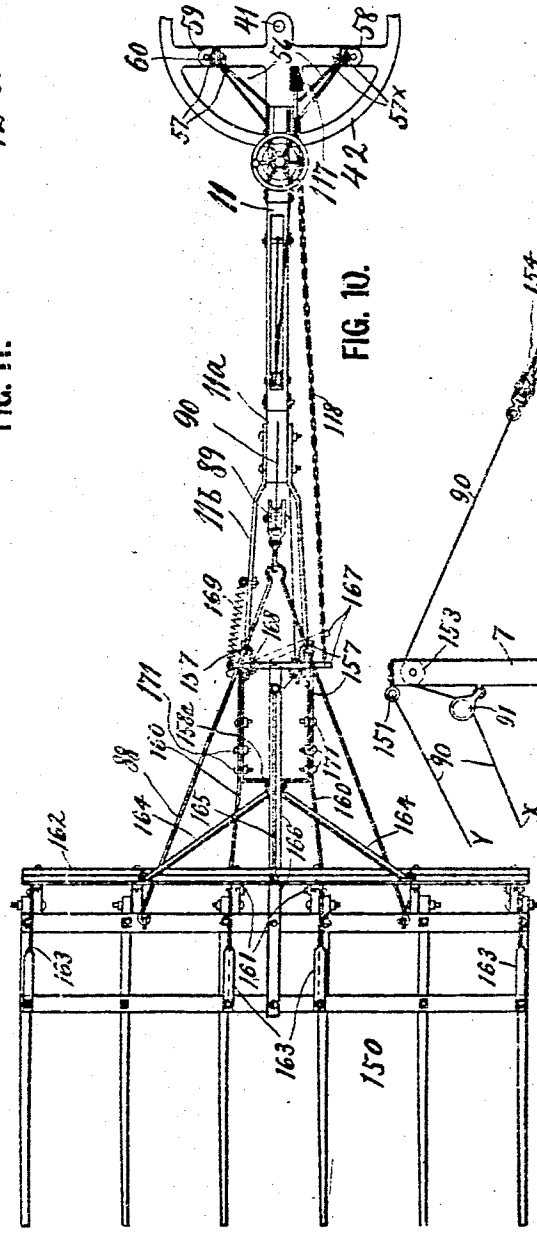

FIG. 10.

FIG. 12.

WITNESSES:

D. E. Carlsen

M. K. Carlsen.

INVENTOR:

Nels H. Nelson

BY his ATTORNEY:

A. M. Carlsen

UNITED STATES PATENT OFFICE.

NELS H. NELSON, OF WILLMAR, MINNESOTA

DIGGING AND LOADING MACHINE.

No. 880,814. Specification of Letters Patent. Patented March 3, 1908.

Application filed April 25, 1907. Serial No. 370,175.

To all whom it may concern:

Be it known that I, NELS H. NELSON, a citizen of the United States, residing at Willmar, in the county of Kandiyohi and State of Minnesota, have invented a new and useful Digging and Loading Machine, of which the following is a specification.

The principal object of this invention is to provide an efficient loading machine for manure and hay, but the machine may also be used for hoisting and for stacking hay, excavating, digging and loading earth, gravel and other substances, attaching to its beam forks of modified construction, or even a scoop or shovel.

The machine comprises a wheel-supported portable frame adapted to be moved by horses but has a gasolene engine or other motor for operating its working parts. The mast and the derrick beam are foldable upon the main frame, and the latter is provided with a permanently upstanding portion, or brace work, which assist in the folding, raising and holding of the mast in upright position both on level and on sloping ground.

In the accompanying drawings, Figure 1 is a top or plan view of the machine with the derrick beam and its fork removed. Fig. 2 is an enlarged portion of the platform and hoisting device to the right in Fig. 1. Fig. 3 is a side elevation of the complete machine except that most of the draft pole 5 and a portion of the frame work at b^a is broken away to shorten the drawing. Fig. 4 is a detail view of the foot lever 77 in Fig. 3 with adjoining parts partly in vertical section. Fig. 5 is a front elevation of the machine with portions of the side braces broken away and the draft pole removed. Fig. 6 is a rear elevation of the machine with the derrick beam and fork omitted. Fig. 7 is a top or plan view of the derrick and fork and a fraction of the machine. Fig. 8 is a side elevation of Fig. 7. Fig. 9 is a side elevation of the machine in folded position for hauling it idle, only the main parts are shown. Fig. 10 is a top view mainly of the beam with a modified fork attached to it for stacking hay. Fig. 11 is a side elevation of Fig. 10. Fig. 12 is a portion belonging to the upper part of Fig. 11, as indicated by the ropes x and y. Fig. 13 is a detail top view of the turn-table. Fig. 14 is a partly sectional vertical side elevation near the mast, with the turn-table not intersected.

Referring to the drawing by reference numerals, 1, 1 designates wheels with axles 2 and 3, upon which is mounted the main frame 4 of the machine, 5 is a pole by which horses may steer and draw the machine to and from the place where it is to be used.

To the rear end of the frame 4 the mast 7 is hinged at 6 to fold upon the frame and rest in the top notch 8 of an A-shaped frame or crutch 9 at the front end of the frame. Said frame 9 has a horizontal arm 10, upon which the beam 11 rests when folded upon the side of the frame as in Fig. 9.

Upon the main frame is fixed by braces 12, 13, 14, and 15 at a considerable height a segment 16, which is a portion of a circle with center at the hinge or pivot joint 6 of the mast. To the mast is secured a yoke-shaped metal frame 18, (see Figs. 1, 5 and 6), having in a hole and in a vertical slot 21 a long bolt 19, with a thumb-nut 20 taking against one side of the frame and a hook 22 taking against the outer side of the segment when the bolt is placed in either of the notches 17 therein, the notch being selected that will keep the mast in vertical position whether the front and rear supporting wheels are on level or on sloping ground, and the nut 20 then clamps the mast frame 18 to the segment. If the ground should hold one of the wheels 1 higher than the other, the mast is adjusted to vertical position laterally by the screws 23, which are threaded in metals 24, fixed on the end timber 4^a of the main frame, and press with their ends upon metals 25 fixed upon the ends of the bolster 26 secured upon the rear axle 3, said bolster and timber 4^a being pivoted together at the middle by means of a pivot 45 through overlapping plates 46, fixed on the said parts. In said upright position the mast is further secured by the brace 15^a and the two longer side braces 27, 27^a and the front brace 28, of which the latter three are pivoted to a casting 29 on the mast, and each is provided with a sliding joint formed by clips 30 having a clamping screw 31 to hold the overlapping sections of the brace in the adjusted position. The lower end of brace 28 is pivoted at 32 to the main frame; and the braces 27 are adjustably pivoted at 33 to links 34 to prevent their slipping outward on the ground, where they are pivoted to shoes 35, which by being pivoted will adjust themselves to the surface of the ground. The mast is still further braced by having pivoted to its lower end a shoe or ground block 36, which is adjusted to

the ground by an adjusting screw 37 in a pivoted clevis 38, and a slanting brace 39, slidable on 36 and having its upper end loosely held in place by a metal bracket 40, engaging the lower end of the bolt or pintle 41, on which the turn-table 42 and its braces 43 are journaled; said bolt 41 passing through the horizontal arms of a bracket 44 secured on the mast and resisting with its lower arm the bracket 40 on brace 39.

To raise and lower the mast, I mount on the brace 12 a windlass 49 with hand-crank 48, ratchet wheel 47, and pawl 50 engaging the latter; and upon said windlass is wound a rope 51, passing over sheaves 52 and 53 on the segment 16, and fastened at 54 near the top of the mast, while between the sheaves 52 and 53 the rope is passed as a loop over a sheave 55 on the frame 18, fixed on the mast, whereby when the windlass is applied the loop will raise or lower the mast, as will also the upper part $51^{\times}$ of the rope when it occupies the slanting position fully shown in Fig. 9.

The beam 11 has its lower end provided with two arms 56, pivoted by two bolts 57 and $57^{\times}$, to lugs 58, 59 of the turn-table, the latter lug makes half a turn on a pivot bolt 60 when the bolt $57^{\times}$ is removed and the beam is folded forwardly as in Fig. 9. During the folding of the beam the braces 15^{a}, 27 and 28 are detached and placed on the main frame while brace 27^{a} folds with the mast.

From the front side of the mast extend horizontal arms 61—62, which serve as joists for a platform 63 on which the operator stands. To the front ends of the joists is secured a bridge 64 having depending end-lugs 65 clamped to the side bars of the main frame by hook-bolts 66 and nuts 67 thereon. When the mast is to be folded said nuts are loosened to let the bridge swing downward with the platform and turntable, as shown in Fig. 9.

As best shown in Fig. 5, the bridge is formed with an upper and a lower bar in which is journaled a vertical shaft 68, having at its upper end a hand-wheel 69 and between the bridge-bars a sprocket wheel 70, engaging an endless link-belt 71, which is passed around the turn-table and engages its sprocket teeth 72. Of course any other form of chain may be used and the faces of the turn-table and the wheel 70 will then be made accordingly. Either form of chain or cable may be used; and it is not necessary that it should extend entirely around the turn-table, but may have its ends secured near the normally rear edge of the table. It will be observed that the turn-table being journaled beyond the mast, has a large clearing 73 for the mast, and a gate piece 74 (see Fig. 1) pivoted at 75 and screw-fastened at 76, so that the table may be easily removed from the mast and replaced again.

In Fig. 4 is best shown a foot lever 77, normally held upward by a spring 78 and having a cam 79, which when the lever is depressed by the foot holds by frictional contact the wheel 70 and thereby the turn-table in any desired position, so it cannot be turned by wind blowing at the beam and the load raised by it. Turning now to a consideration of the working mechanisms and the power operating them, the derrick beam is made in two overlapping sections 11 and 11^{a}, each of which has affixed to it a clip-shaped guide 79, loosely embracing the other section. In the inner end of the beam section 11^{a} is secured at 80 the end of a rope or cable 81, which is passed over a sheave 82 in the outer end of section 11, and thence to a windlass 83, mounted upon the inner end of said section 11 and is provided with a hand-wheel 84, ratchet wheel 85 and a spring-actuated dog 87 (shown in Figs. 7 and 8), engaging the ratchet teeth to hold the beam extended to the different lengths desired. The beam is raised and lowered by having at its outer end a yoke or clevis 88, and attached thereto a running block 89, to which is secured one end of a rope or cable 90, passing through a standing block 91 on the mast, thence through the running block, thence through another standing block 92, and thence under a guiding sheave 93 in the mast and to a drum 94, on which it is wound when the operator steps on a foot-lever 96, which by a wire or rod 97 and a bell-crank lever 98, engaging an annular groove 99 of the hub 100, which slides and revolves on the shaft of the drum and carries a friction disk 101, adapted to engage the end of the drum and turn it, and having a broad-faced pulley 102, driven by a belt 103 from a gasolene engine 104, or other suitable motor mounted on the platform 105 at the front end of the main frame.

106 is a brake band adapted to be pulled against the peripherical face of one of the end flanges of the drum, by a wire 107 and a hand-lever 108 mounted on the operator's platform 63, so that by using the brake lever the beam and its load may be held elevated and lowered slowly by the operator.

In a metal yoke 11^{b}, bolted on the outer end of the beam, is pivoted to tilt at 109 a fork-frame 111, in which is pivoted at 112 a fork 110 adapted to dig, gather and hold the manure, earth or other heavy matter to be raised by the hoisting mechanism just described. Said fork-frame is held in normal position by a hook 113, pivoted at 114 to the beam and normally held by a spring 115 engaged with a cross bar 116 of the frame, but becomes disengaged when the operator steps on a pedal 117, which is attached to the hook by a chain 118, whose length is easily adjusted to that of the beam by placing the proper link of the chain on to a hook (not shown) on the pedal.

When the hook 113 is disengaged the frame 111 tilts downward to the position shown in dotted lines in Fig. 8, so as to engage the materials with which the fork is to be filled, the frame is then tilted back to engagement with the hook and with the fork filled. The latter tilting is done by the rope 119, having one end fixed at 120 to the mast and the other end passed through a block 121 on the fork-frame and a standing block 122 on the mast, and thence over a sheave 123 in the mast and to a drum 95, which is operated and controlled so exactly the same as above described for drum 94 that a repetition of the description is unnecessary, especially as the corresponding parts for drum 95 are marked the same numerals only with an exponent "a" added. Thus the lever 108^a brakes drum 95 and belt 103^a drives it.

To swing the fork frame more fully to the desired lowered position in Fig. 8, the operator may turn the hand-crank wheel 124 of a windlass 125, mounted on the mast, and thus wind thereon a rope 126, which is guided by sheave 127, block 128, sheaves 129 and 130, and has its outer end formed with two branches, of which the shorter branch 131, is attached to a yoke 134 pivoted at 135, and the longer branch 132 is fixed to the junction of the fork 110 and what may be termed the fork handle, 136, and its function is to tilt the fork back after dumping and also to help the branch 131 to tilt the fork frame.

It will be observed that the block 128 is mounted on the top end of the bolt 41 so as to be in the center of the turn-table. In the yoke 134 are several rollers 137, between which the fork handle is held at different elevations when the yoke is swung outward by the spring 138, which is secured with one end in the apex of the bracing arch 139 and the other to a pin 140 extending transversely through the bars of the yoke.

At 141 is pivoted in the fork frame two parallel links 142, having slots 143 engaging the pin 140. The result of this construction is that a partial pulling on the rope 126–131 will release the handle 143 and allow the load to tilt the fork and dump out of it, the pin 140 moving sufficiently in the slots 143 for that purpose, but further pulling on the rope will bring the pin to the inner ends of the slots and then the fork frame will tilt if released from hook 113.

It will be observed that the fork frame is a very strong construction without being heavier than necessary, since it is made of four longitudinal bars 144, 145 all converging and secured together at 146, and converging at the opposite ends, two and two together, to form bearings for the pivots or trunnions of the fork, and at the spread middle portion of the frame the bars are braced by the arch 139, and the braces 147 and 148, besides the bolts 109 and 149 passed through the bars and through tubular props between the bars.

When the machine is to be used for stacking hay, the scooping fork 110 is removed and a larger fork like 150 in Figs. 10 and 11 substituted, and the arrangement of the hoisting cables slightly modified so as to bring the fork higher up than in ordinary loading. This may be accomplished in the following two manners: Firstly, by removing the small fork 110 and the beam section 11^a, and substituting a longer beam section with the hay fork mounted on it; and then pass the hoisting cable as in Figs. 11 and 12, from the point 151 near the top of the mast, through a running block 152, thence through a standing block 91 on the mast and thence over a guide sheave 153 in the mast, and thence to the hoisting drum. Or, if the machine is intended for stacking only, the engine may be omitted, and the rope 90 given a power-increasing tackle 154, attached to a timber 155 of the front end of the main frame, and horses hitched to the rope end 156. Secondly, by passing the ropes as above described but retaining the beam section 11^a, remove the small fork 110 and its frame 111, remove the bolts 157 (see Figs. 7 and 8), remove the short U-shaped piece 158 from side grooves 159 in the metal yoke 11^b, and substitute and secure by said bolts 157, (see Figs. 10 and 11), the longer U-shaped piece 158^a, to which the arms 160 of the hay fork 150 are bolted at 171. Said fork 150 is pivoted at 161 to said arms, and at its rear part is a guard 162, well secured to the tines by braces 163, and by braces 164—165 to the tongue or handle 166, which is held downward by a latch 167, pivoted at 168 and held by a spring 169 until the chain 118 pulls it away and allows the load to tilt the fork and empty it. To prevent too sudden a dumping the rope 126 is secured at 170 to the fork handle and controlled by the windlass 124, which is shown in Fig. 3, where it will also be seen in this connection that the chain 118 and rope 126 are the same for both forks, and the latch 167 in Fig. 10 is a plain equivalent for the latch or hook 113 in Fig. 3; and that in Fig. 11 as well as in Figs. 3 and 8 the rope 126 helps to restore the fork to normal position after it is emptied.

In order to allow leveling of the main frame by the screws 23 in Fig. 6 the front end of the frame (as shown in Fig. 5) is allowed to rock on the bolster 26^a, upon which it is loosely secured by the bolt 172. 172^x are longitudinal truss-braces, which in Fig. 9 are shown to connect the front and rear axles and to be secured to a transverse frame bar 174, whose ends are bolted at 175 to brackets 173, depending from the side bars of the frame. 176 are eyebolts to which the pole 5 is attached.

Having in my United States Patent No.

842,904 claimed some of the features and parts above described, I will not claim the same in this present case; but

What I claim is:—

1. In a machine of the class described, the combination with a wheel-supported main frame, of an upwardly extending frame work fixed thereon, a notched segment on the frame work, a mast pivotally secured to one end of the main frame and adapted to stand plumb up and also to be folded upon the main frame, a metal frame fixed on the mast, a clamping bolt carried thereby and adapted to engage in the notches of the segment and hold the mast adjusted in vertical position.

2. In a machine of the class described, the combination with a wheel-supported horizontally-disposed frame, of a mast pivotally secured to one end of the frame, and a crutch upon the other end of the frame for the mast to rest on when folded.

3. In a machine of the class described, the combination with a wheel-supported main frame and a mast pivoted to one end thereof, of the brace 28 extending from the upper part of the mast to the other end of the main frame, and the side braces 27, 27ª, extending from the mast to the ground and having pivotally secured shoes 35 bearing on the ground, and the links 34 connecting them with the main frame.

4. In a machine of the class described, the combination with a wheel-supported main frame and a mast pivoted to one end thereof, of the brace 28 extending from the upper part of the mast to the other end of the main frame, and the side braces 27, 27ª, extending from the mast to the ground and having pivotally secured shoes 35 bearing on the ground, and the link 34 connecting them with the main frame, and means for adjusting the length of said braces.

5. In a machine of the class described, the combination with a wheeled frame and a mast pivoted to one end of the frame, of a derrick beam swinging from one side of the mast, the mast having upon said side the supporting block or shoe 36 pivoted to its lower end, and the slanting brace 39 extending from the shoe to the mast; and the clevis 38 and adjustment screw 37, for the purpose set forth.

6. In a machine of the class described, the combination with a wheel-supported horizontal skeleton frame, of a mast pivotally secured to the rear end of the frame, and a rest for the mast to fold upon at the front end, a platform fixed to the front side of the mast, a bridge bar carried by the front end of the platform and means for securing the ends of said bridge bar detachably to the side bars of the skeleton frame when the mast stands upright, and allowing the bridge and the platform to swing downward into the frame when the mast is folded.

7. In a machine of the class described, the combination with a derrick mast, of a bracket fixed upon one side of it, a turn-table journaled to the bracket and having between its center and periphery a clearing for the mast so as to allow the table to oscillate, a derrick beam supported on the turn table, and operating ropes connecting it with the mast, and means for oscillating the table.

8. In a machine of the class described, the combination with a derrick mast, of a bracket fixed upon one side of it, a turn-table journaled to the bracket and having between its center and periphery a clearing for the mast so as to allow the table to oscillate, a derrick beam supported on the turn-table, and operating ropes connecting it with the mast, and means for oscillating the table, said table having in its peripheral part a gap for admitting the mast into the clearing, and a segmental gate piece closing the gap.

9. In a machine of the class described, the combination with a wheel-supported main frame, a mast pivoted to one end of the frame and adapted to fold upon it, braces from the mast to the sides of the frame and a central brace from the mast to the other end of the frame; a bracket at the outer side of the mast, a turn-table journaled to the bracket and having between its center and periphery a clearing for the mast so as to allow the table to oscillate, a derrick beam supported with its lower end on the table, and operating ropes or cables extending between the mast and the upper part of the beam, said table having two lugs upon it and said beam having its lower end provided with two legs pivoted one to each lug to swing in vertical plane, one of the lugs being pivoted to swing horizontally upon the table, the other lug being adapted for detachment of the leg from the table so that the beam may be swung to one side of the main frame in folding the machine; said central brace and the said braces at one side of the mast being detachable from the main frame to allow the beam to swing to said folded position, and means for holding the beam in the folded position.

10. In a machine of the class described, and mounted in a suitable frame, the combination with a turn-table having cogs upon its periphery, of a mast adjacent thereto, a derrick beam pivoted upon the table, operating cables from the beam to the mast, a vertical shaft journaled in the frame work, a small wheel fixed on the shaft and having cogs, a chain engaged by the cogs of the small wheel and of the turn table, and means for turning the shaft by hand, and a foot operated cam-lever engaging the small wheel to prevent accidental turning of same.

11. In a machine of the class described, the combination with a portable frame, of a

derrick mounted thereon and comprising a mast, a hoisting beam supported from the mast, and in the free end of the beam a frame pivoted to tilt on a horizontal axis, a fork or scoop pivoted in the lower end of said tilting frame, two platforms on the main frame, one for the operator to stand on near the mast, and the other an engine or motor, two rope drums near the engine, two clutch members rotated by the engine one near each drum, a brake to each drum, four operating levers on the operator's platform and operatively connected, one of them with each brake and one with each clutch member for throwing it into operative contact with the drum; a cable secured to each drum to be wound thereon, the same being guided in the upper part of the mast and having operative connection one of them with the outer end of the beam and the other with the upper end of the tilting frame holding the fork, whereby the operator can easily control both the digging and the raising motion of the fork.

12. In a machine of the class described, the combination with a portable frame, of a derrick mounted thereon and comprising a mast, a hoisting beam supported from the mast, and in the free end of the beam a frame pivoted to tilt on a horizontal axis, a fork or scoop pivoted in the lower end of said tilting frame two platforms on the main frame, one for the operator to stand on near the mast and on the other an engine or motor, two rope drums near the engine, two clutch members rotated by the engine one near each drum, a brake to each drum, four operating levers on the operator's platform and operatively connected, one of them with each brake and one with each clutch member for throwing it into operative contact with the drum; a cable secured to each drum to be wound thereon the same being guided in the upper part of the mast and having operative connection one of them with the outer end of the beam and the other with the upper end of the tilting frame holding the fork, whereby the operator can easily control both the digging and the raising motion of the fork; a hand-operated windlass and rope thereon and means controlled thereby for tripping the fork when it is to dump its load, and for tilting it back again, and for holding it in normal position, and for pulling the tilting frame and the fork backward into position to readily fill the fork when its supporting frame is tilted by the power-operated cable, and foot operated means for holding the tilting frame in normal position and for releasing it to let it tilt.

13. The combination with a derrick beam of a metal yoke secured on and extending beyond the free end of the beam and being adapted for securing to it various forms and sizes of forks and scoops, substantially as and for the purposes set forth.

14. In a machine of the class described, the combination with a wheel-supported main frame, of an upwardly extending frame-work fixed thereon, a notched segment on the frame work, a mast pivotally secured to one end of the main frame and adapted to stand plumb up and also to be folded upon the main frame, a metal frame 18 fixed on the mast, a clamping bolt carried thereby and adapted to engage in the notches of the segment and hold the mast adjusted in vertical position, a windlass on the upstanding fixed frame, the sheave 52 and 53 on the segment, the sheave 55 on the frame 18, and the cable 51, secured near the top of the mast, passing over the said sheaves and having its lower end operated by the windlass.

15. In a machine of the class described, the combination with the mast 7, of the bracket 44 fixed thereon, the turn-table 42 pivoted thereto by the bolt 41, the standing block 128 attached to the upper end of said bolt, a windlass on the mast, an extensible hoisting beam pivoted upon the table to swing with it, a tilting fork in the outer end of the beam, a cable passed through the standing block and operatively connected with the fork and the windlass, and sheaves on the beam for guiding the cable.

16. In a machine of the class described, the combination with the mast 7, of the two-armed bracket 44 fixed at one side of it, a turn-table supported upon the upper arm of the bracket and having a downwardly extending arm 43 resting upon the lower arm of the bracket, and the pivot bolt 41 passed through the center of the table and said arms, for the purposes set forth.

17. In a machine of the class described, the combination with the bolster 26 and the frame bar 4^a, of overlapping plates 46 pivoted together at 45 and secured on said bolster and frame bar.

18. The combination with a derrick beam having a yoke at its outer end, of a metal frame pivoted to tilt on a horizontal axis in the yoke, and a fork mounted to tilt in the lower end of the frame and means for operating the frame from its upper end; said frame being formed of two pairs of longitudinal bars and an arch 139 holding the bars spread near their middle, each pair of bars having their lower ends converged together to form bearings for the fork, and the upper ends of the bars being all four converged together to form the point operatively connected with the power mechanism of the machine.

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

NELS H. NELSON.

Witnesses:
T. O. GILBERT,
G. K. WANGSNESS.