

Aug. 11, 1931.

T. H. JAMISON

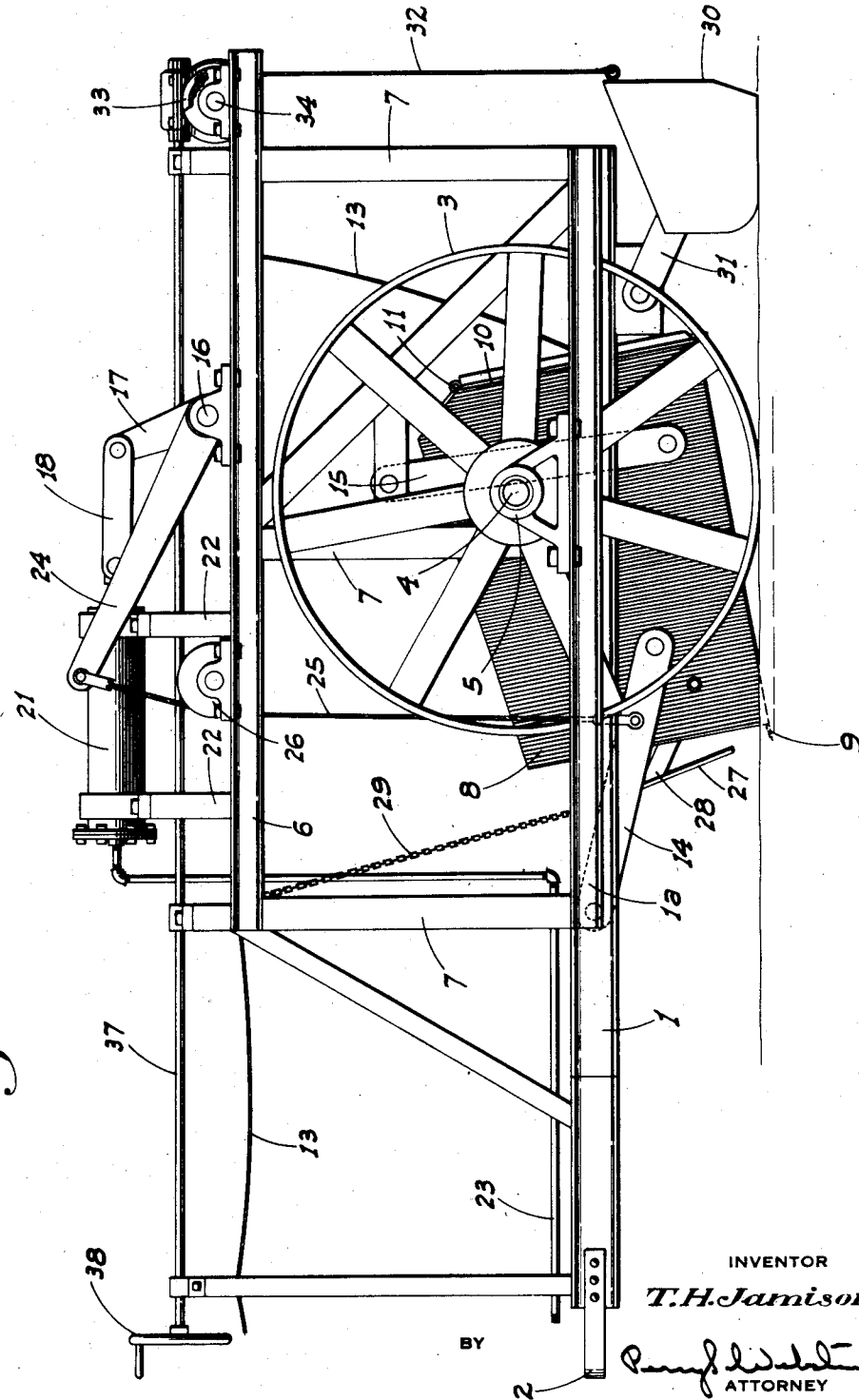
1,817,985

POWER LIFT SCRAPER

Filed Oct. 31, 1930

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Fig. 1



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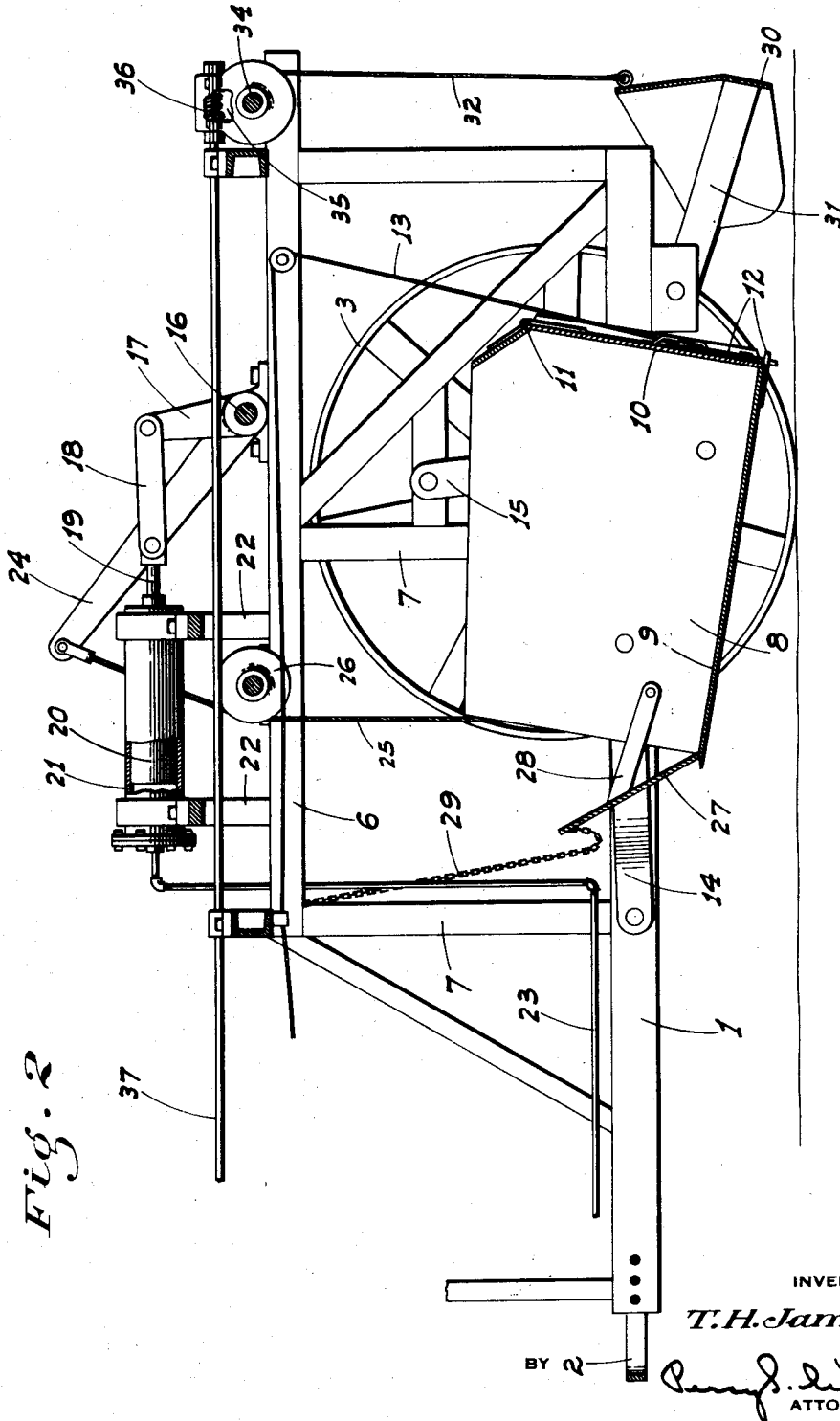
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UNITED STATES PATENT OFFICE

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POWER LIFT SCRAPER

Application filed October 31, 1930. Serial No. 492,481.

This invention relates to scrapers of the wheel supported type in which the bowl is provided with a rear-end gate for discharging the load carried by the bowl and in which the bowl is arranged to be raised at its forward end when it is desired to discharge the load so that the dirt will slide out from the rear when the gate is open.

The principal object of my invention is to provide a hydraulic manipulating structure for the bowl of a scraper of this type so arranged that the bowl may be moved to different positions as desired by a control means mounted on the tractor hitched to and pulling the scraper. All manual labor in connection with the manipulation of the scraper bowl is therefore eliminated as well as the necessity of stationing an operator on the scraper in addition to the operator of a tractor, thus cutting down working costs to an appreciable degree. I have also provided a structure for the purpose which is of an extremely simple nature so that it is not only relatively inexpensive to manufacture but which has practically nothing to get out of order and give trouble, and hence reduces operating or upkeep costs to a minimum.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a side elevation of my improved scraper showing the bowl in its scraping position.

Fig. 2 is a sectional elevation of the scraper showing the bowl raised somewhat.

Referring now more particularly to the characters of reference on the drawings, the structure comprises a main frame which consists essentially of side beams 1 which as customary are parallel to each other toward their rear ends, but converge together at their forward ends, at which ends they are connected to a yoke or clevis 2 adapted for coupling engagement with the drawbar plate of a tractor. Ground engaging wheels 3 are disposed outwardly of the beams 1 toward the rear,

the wheels being disposed between the main beams and outer auxiliary side beams 1a. This arrangement enables the wheel axles 4 to be supported in bearings 5 which are mounted on the main and auxiliary beams, thus avoiding the necessity of a continuous axle from side to side and leaving the space between the main beams unobstructed. Above the wheels are upper horizontal frame beams 6 suitably supported from the beams 1 by uprights 7. Disposed in the space between the beams 1 and located below the upper auxiliary frame and substantially in transverse alinement with the wheels is the bowl of the scraper. This bowl consists of side plates 8, a bottom plate 9 provided with a front-end cutting edge or lip, and a normally closed end-gate 10 hinged as at 11 on the back of the bowl adjacent the top. The end gate as usual in structures of this character is provided with a latch arrangement indicated at 12 which may be released when desired by a control cable 13 projecting upwardly to the auxiliary frame and then forwardly so that it may be actuated from the tractor.

The bowl is flexibly hung in place by draft bars 14 connected to the side plates 8 toward their forward ends and extending forwardly to connections with the side beams 1; and by hanger arms 15 connected to the side plates toward the bottom and rear end which extend upwardly to connections with the frame structure adjacent certain ones of the uprights 7.

The bowl tends to lower of itself due to its weight, and to raise and hold the front end of the bowl at any desired level I provide the following means: Mounted on the beams 6 to the rear of the longitudinal plane of the bars 14 is a transverse shaft 16 from which a radial arm 17 projects upwardly. Horizontal links 18 are connected to the upper end of this arm and to a piston rod 19. This piston rod is connected to a piston 20 which is slidable in a cylinder 21. The cylinder is rigidly mounted in a horizontal position substantially on a level with the top of the arm 17 by cross brackets 22 extending between the beams 6. A pipe 23 in which a suitable liq-

uid under pressure is maintained by the necessary apparatus on the tractor, is connected to the end of the cylinder opposite the arm 17 and extends thence to the forward end of the main frame so that it can be connected to the tractor by a flexible hose as is necessary.

Secured to and projecting radially from the shaft 16 toward its ends and in vertical transverse alinement with the bars 14 and overhanging the rear ends of the same are other arms 24. Cables 25 are connected to the outer ends of these arms and depend thence to connections with the bars 14 intermediate the ends of the same. These cables pass over pulleys 26 mounted on the beams 6 and so disposed that the portions of the cables between the pulleys and the bars 14 will remain substantially vertical irrespective of the turning of the arms 24. The parts of the bowl raising structure above described are arranged so that as the piston moves away from the pipe connected end of the cylinder the arms 24 must be raised and the draft bars and the front end of the bowl will be raised likewise.

To prevent the dirt from dropping out of the bowl when the latter is raised for carrying purposes without interfering with the scraping of the dirt I provide a front end-gate 27 which extends at a forward upward angle to the bowl at its front end and is pivotally connected to the side plates by arms 28 which are rigid with the gate. This gate is normally held suspended so that its lower edge is clear of the cutting edge or lip of the bowl when the latter is in its scraper position by chains 29 or the like. This gate is arranged so that its lower edge will engage the bottom of the bowl at the forward edges of the side frames when the bowl is raised a certain distance, and with a further raising of the bowl the gate retains this position relative to the bowl and raises with the same.

Rearwardly of the bowl I provide a leveler blade 30 which is connected to the main frame by arms 31 extending forwardly from and rigidly connected to said blade but pivoted in connection with the frame. This blade also tends to lower of its own weight, and to hold the same at any level I provide cables which are secured to and project upwardly from the blade and which at their upper ends are secured to drums 33.

These drums are mounted on a transverse shaft 34 which intermediate its ends has a worm gear 35 thereon meshing with a worm 36. This worm is secured to a longitudinally extending shaft 37 which at its forward end, adjacent the forward end of the scraper frame, is provided with a hand wheel 38. By this means it is of course an easy matter to rotate the drums so as to wind or unwind the cables 32 relative thereto, and consequently control the level of the blade 30.

From the foregoing description it will be

readily seen that I have produced such a device as will substantially fulfill the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

A scraper comprising a wheel-supported frame which includes main side beams, a bowl between the beams, means flexibly connecting the bowl to the frame including draft bars pivoted on the beams and on the sides of the bowl, cables secured to the bars and projecting upwardly therefrom, a transverse shaft mounted on the frame above the bowl, radial arms secured to and projecting from the shaft and to the outer ends of which the cables are connected, another radial arm secured to and upstanding from the shaft, a hydraulic cylinder mounted in a horizontal position on the frame beyond the last named radial arm and whose axial line is substantially on a level with the outer end of said last named arm, a piston slidable in the cylinder, a piston rod connected to the piston and projecting toward said last named arm from one end of the cylinder, and links connecting the arm with the outer end of the rod.

In testimony whereof I affix my signature.

TOBIAS H. JAMISON.