

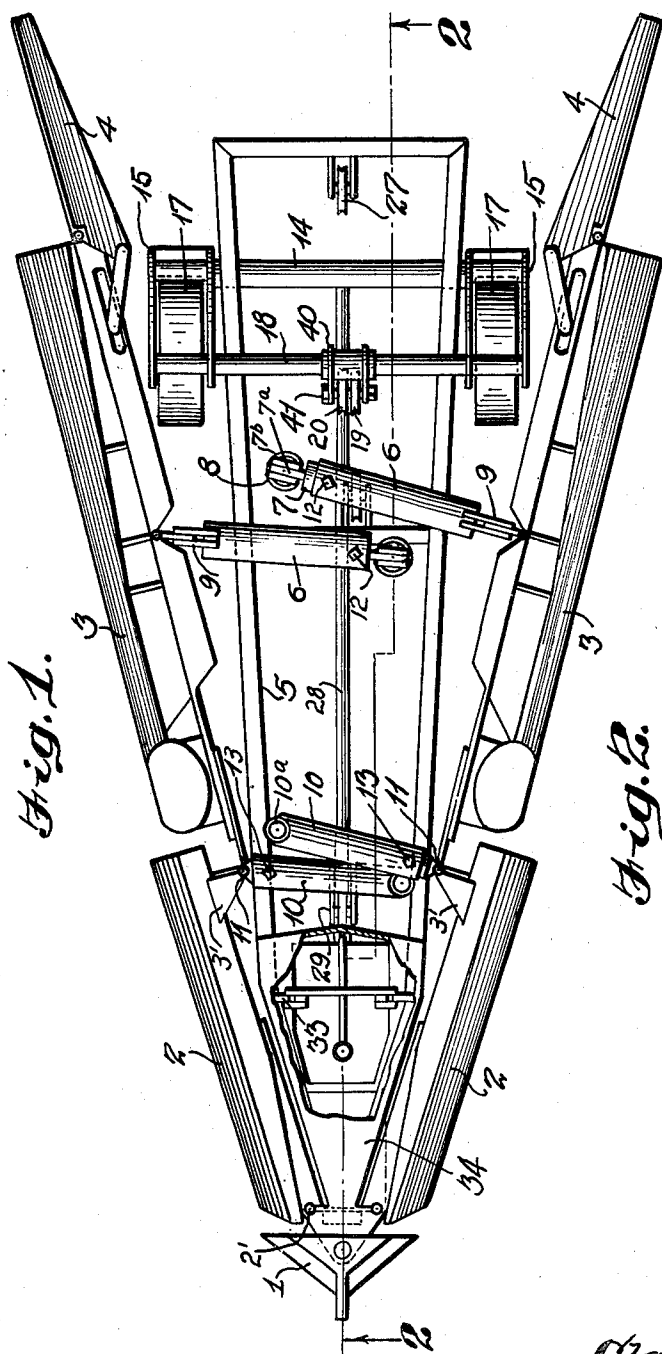
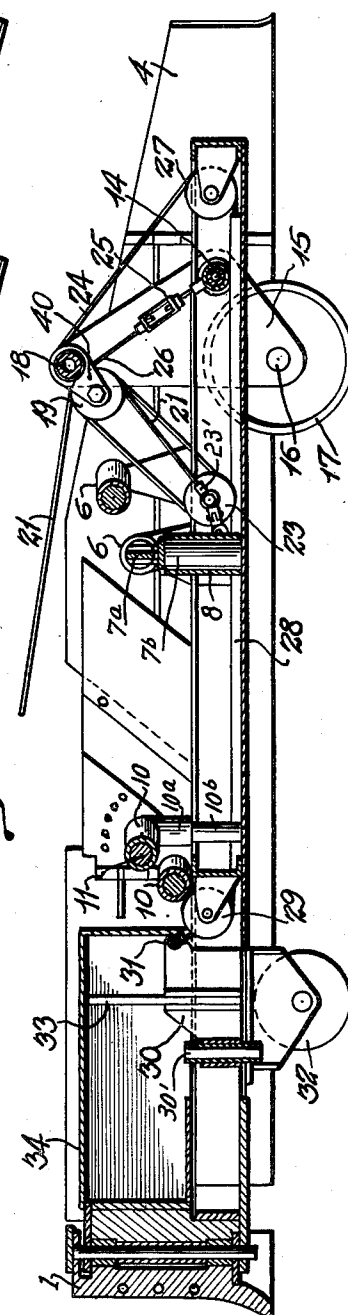
April 3, 1951

C. L. WRIGHT
DITCH GRADER

2,547,680

Filed June 4, 1946

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

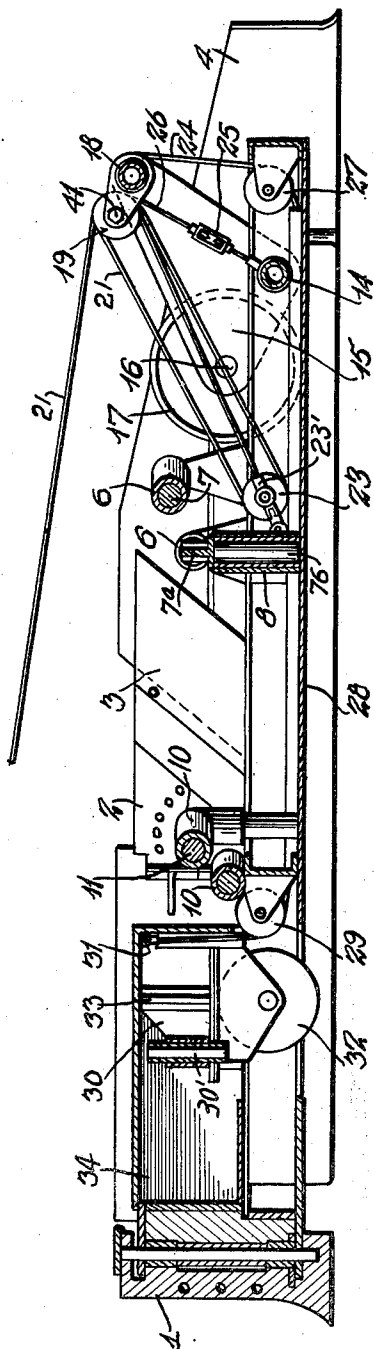


Fig. 4.

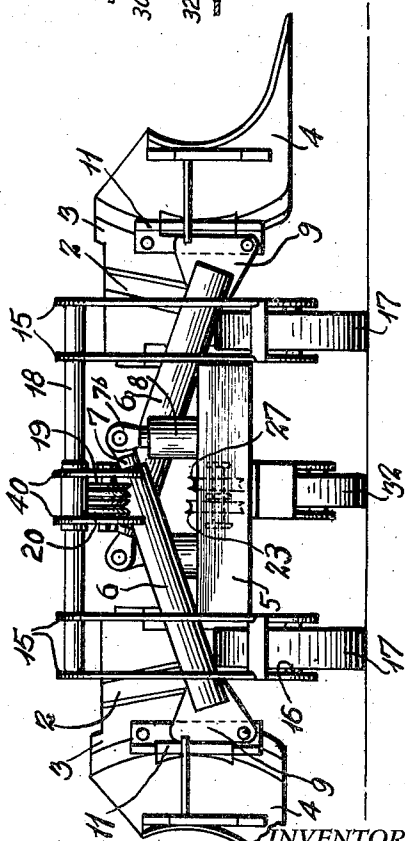
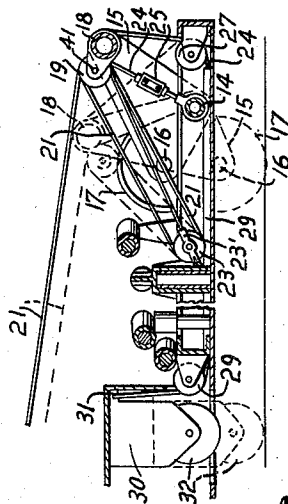


Fig. 5.



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DITCH GRADER

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2 Claims. (Cl. 37—98)

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This invention relates to improvements in ditching devices, and more particularly to the provision of a novel ditch grader.

It is an object of the invention to provide a ditch grader which has a positive lift under any condition to a sufficient height to clear obstacles.

A further object is the provision of a ditch grader having lifting mechanism adjustable to regulate cutting capacity as conditions may demand.

A further object is the provision of a ditch grader by which the cutting is accurately regulated from the tractor operator's seat.

A further object is the provision of a ditch grader with a pilot wheel which pivots with draft, allowing the ditcher to be easily drawn from a ditch and turned around in close quarters.

These and other objects are attained by the novel construction and arrangement of parts hereinafter described and illustrated by the accompanying drawings, forming a part hereof, and in which:

Fig. 1 is a plan view of the ditch grader.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 showing one position of operation.

Fig. 3 is a sectional view taken on the line 2—2 showing another position of operation.

Fig. 4 is a rear view of the ditch grader minus the cable rope.

Fig. 5 is a diagrammatic outline of the cable arrangement in the device.

Referring to the drawings, in Fig. 1, the ditch grader is shown to comprise a pivoted forward nose 1, adapted to be attached to a tractor or other suitable draft device (not shown), forward side wings 2 pivoted on king pins 2' and rear side wings 3 pivoted on hinge plates 3' secured to wings 2, with tail portions 4 pivoted on wings 3.

The ditch grader is mounted on a frame constructed of channel iron, said frame being indicated by a numeral 5. The rear wings 3 are connected by struts 9 to tubular members 6, having telescoped therein rods 7, which have tongues 7a pivoted to ears of posts 7b rotatably mounted in cylindrical supports 8 on frame 5. The rods 7 are slidable within the tubular members 6 and are held in adjusted positions in the tubular members 6 by set screws or bolts 12.

The front wings 2 are similarly connected to the frame by tubes 10, having telescoping members 11, which are pivoted to plates 3' and are held in adjusted positions by set screws or bolts. The tubes 10 are secured to cylindrical supports 10a pivotally carried by posts 10b attached to the frame 5.

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By the above described structure, the wings 2 and 3 can be adjusted to various widths for different desired cuts.

Pivotally mounted on each end of an axle support 14, secured to the frame 5, are a pair of heavy triangularly shaped members 15, through which pass a shaft 16 upon which are rotatably mounted wheels 17, the latter being sufficiently wide to provide the proper carrying capacity and support to allow accurate grading even in soft material.

The upper ends of the members 15 have passing therethrough a shaft 18 to which is secured a pair of arms 40 carrying a stub axle 41, upon which are mounted sheaves 19 and 20. Leading from the aforementioned tractor or other draft device and attached to its power operated winch or a hand operated winch, is a cable 21 which first passes over sheave 20, thence under a sheave 23, secured to the frame 5, and next over a sheave 19 and down to an anchor 23' also attached to the frame 5.

Passing over and around axle 18 is a cable 24 having a portion 26 connected to a turnbuckle 25 which is connected to axle 14. The cable 24 passes under a sheave 27 mounted on the frame 5, through a pipe 28, and under sheave 29 mounted on the frame, and is connected to a housing 30, at 31. The housing 30 swingably supports a front wheel 32, and the housing is vertically slidable on guides 33 in a compartment 34 on the frame.

In operation, as explained above, to adjust the width and regulate the cut of the wings, the tubular members 6 and 7, and 9 and 10 are adjusted.

To adjust for depth of cut or to lift the grader above an obstacle, the wheels 32 and 17 may be simultaneously raised or lowered by pulling on the cable 21 by the aforementioned winch (not shown). A pull on cable 21 results in the front and rear wheels being lowered. By slacking off on the cable, the front and rear wheels will rise due to gravity acting on the frame 5.

From the above description it will be seen that there has been provided a ditch grader which can be adjusted for various surfaces, and having means for adjusting the wings for various cuts. The adjustments are simple and easily made. The front wheel or pilot wheel 32 is pivotally mounted about a king pin 30' and pivots with the draft enabling the ditcher to be easily drawn from a ditch and turned around in close quarters.

The above description is to be considered as descriptive and illustrative, and not limitative of

the invention, of which modifications can be made without departing from the spirit and scope of the invention as set forth in the appended claims.

The invention having been described, what is claimed is:

1. In a ditch grader, a frame, ditch grading wings, means pivoting the same on opposite sides of the frame, telescoping adjusting members attached to said wings and said frame, pivot means supporting said members on said frame whereby said wings may be adjusted relative to the frame; triangular members, means pivoting the same on the frame, wheels rotatably supported by said triangular members, a housing mounted for vertical movement on the frame, a pivoted front wheel rotatably mounted on the housing, sheave means supported by said frame, a first cable trained under said sheave means and connected to the housing and one of the triangular members, whereby all said wheels are shifted relatively to said frame in unison, pulley means on said triangular members and a second cable means passing over said pulley means and adapted to be connected to a source of power whereby said second cable causes pivotal movement of said triangular members.

2. In a ditch grader, a frame, ditching wings, means adjustably connecting the same to the frame, support means pivotally supported by the frame, a pair of rear wheels rotatably supported by the support means, a housing mounted for vertical movement on the frame, a front wheel mounted in said housing, pulley means supported by said support means, a cable passing over said pulley means and attached to the frame, a pair of spaced sheaves attached to the frame and a second cable passing under said sheaves, one end of said second cable being attached to the support means and the other end of said second cable being attached to the housing.

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