M. C. McLAUGHLIN.

DITCHING MACHINE.

APPLICATION FILED DEC. 14, 1915.

1,296,302.

Patented Mar. 4, 1919.

2 SHEETS—SHEET 1.

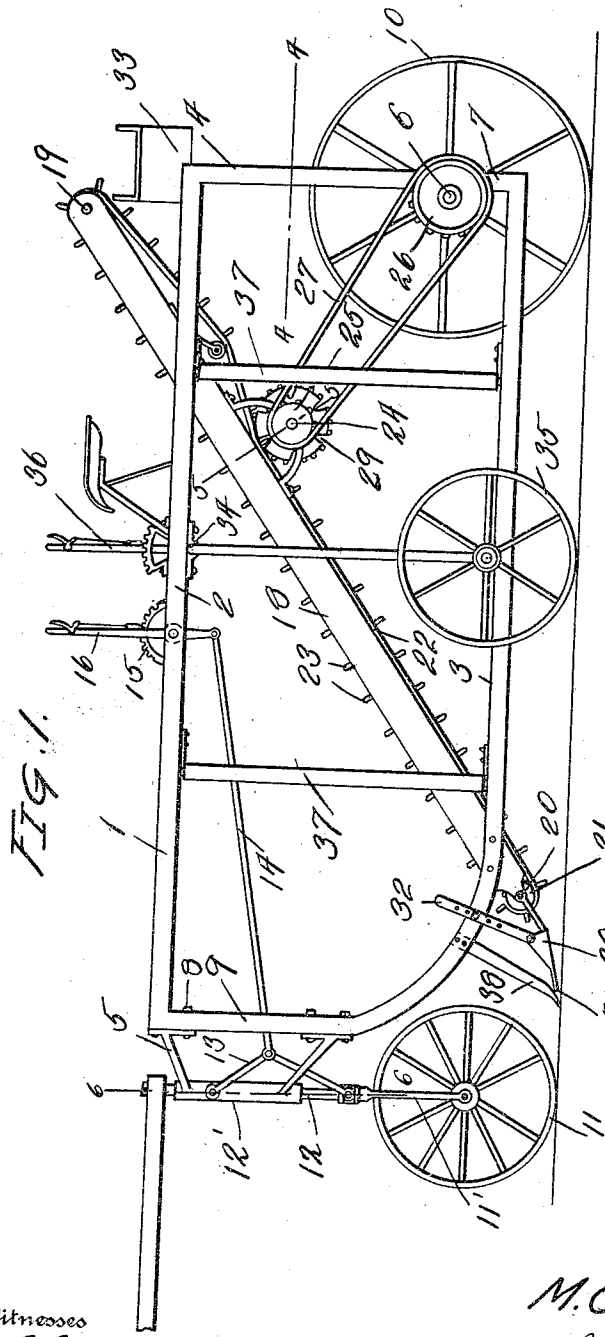


FIG. 1.

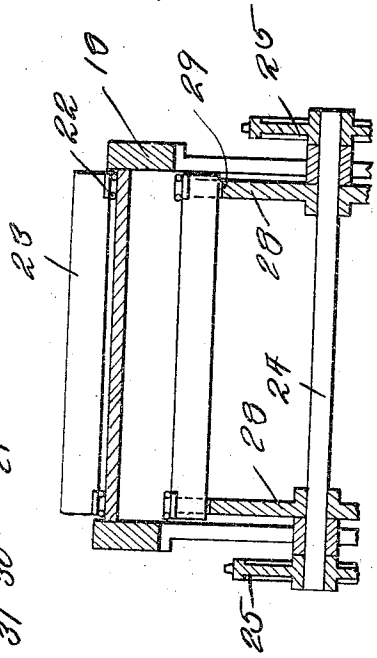


FIG. 5.

Witnesses

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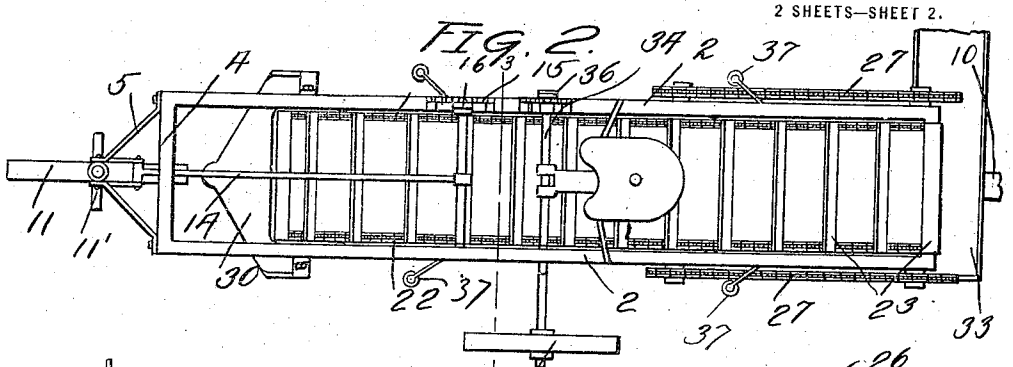
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2 SHEETS—SHEET 2.

FIG. 2.



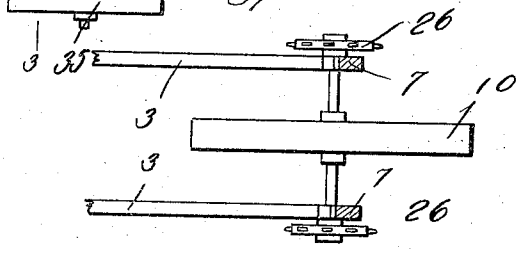


FIG. 4.

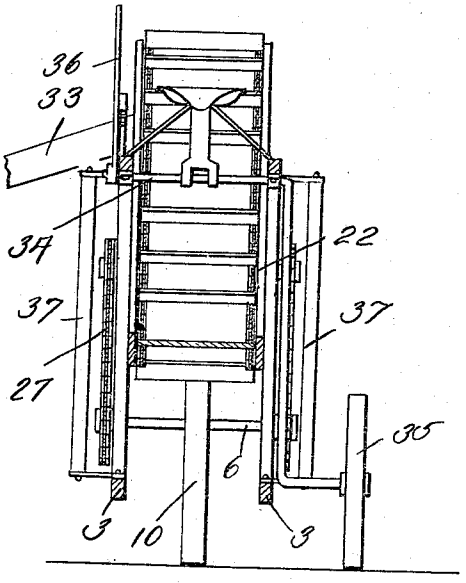


FIG. 3.

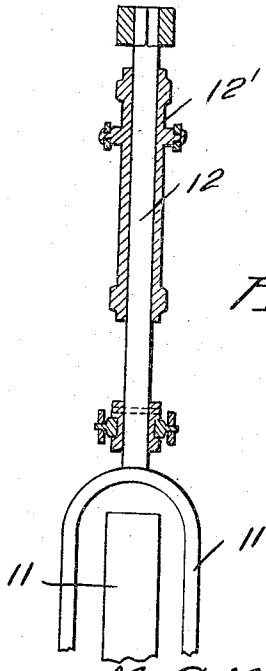


FIG. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

MELVIN C. McLAUGHLIN, OF MARLETTE, MICHIGAN.

DITCHING-MACHINE.

1,296,302. Specification of Letters Patent. Patented Mar. 4, 1919.

Application filed December 14, 1915. Serial No. 66,827.

To all whom it may concern:

Be it known that I, MELVIN C. McLAUGHLIN, a citizen of the United States, residing at Marlette, in the county of Sanilac, State of Michigan, have invented certain new and useful Improvements in Ditching-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention is directed to improvements in ditching machines, and has for its object to provide a machine of this type capable of being propelled across the field for digging ditches for receiving drain tiles.

A further object of the invention is to provide a ditching machine constructed in such a manner that the excavated earth will be conveyed to one side of the machine.

Another object of the invention is to provide a ditching machine so constructed that the same can be regulated to excavate ditches of different depth.

With these and other objects in view, this invention resides in the novel features of construction, formation, combination and arrangement of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which:—

Figure 1 is a side elevation of the machine.

Fig. 2 is a top plan view.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Fig. 5 is a sectional view on the line 5—5 of Fig. 1.

Fig. 6 is a sectional view on line 6—6 of Fig. 1.

Referring to the drawing 1 indicates the frame, which consists of upper and lower side sills 2 and 3, respectively, held in spaced relation by the end bars 4, brackets 5, and shaft 6. The shaft 6 is journaled on the vertical bars 7 which connect the rear ends of the sills 2 and 3 while the brackets 5 are fixed, by bolts 8, to the vertical bars 9 which connect the forward ends of the sills 2 and 3.

Fixed to the shaft 6 is a wheel 10 which supports the rear end of the frame 1, the forward end of which is supported by the wheel 11 rotatably mounted in the frame 11′.

The frame 11′ is provided with a spindle 12 rotatably engaged in the sleeve 12′ supported vertically by the brackets 5. Toggle links 13 connect the spindle 12 and sleeve 12′, and have connected thereto the forward end of a link 14. Mounted on the sill 2 is a racket segment 15, having pivotally associated therewith a hand lever 16, the lower end of which is pivotally connected to the rear end of the link 14.

Thus it will be seen that upon shifting of the lever 16 the link 14 will be shifted so as to raise or lower the sleeve 12′ on the spindle 12, whereby the front of the machine may be tilted upwardly or downwardly.

Supported between the sills 2 and 3 of the frame is an elevator frame 18 which has journaled in its side bars upper and lower shafts 19 and 20, respectively, each of which is provided at its ends with sprocket wheels 21, and trained around the sprocket wheels are endless sprocket chains 22 which support the transverse flights 23, formed from suitable sheet metal. Supported below the side bars of the elevator frame 18, and intermediate the ends thereof, is a shaft 24, provided with sprockets 25, alined with the sprockets 26 fixed to the shaft 6, and trained around said sprockets are drive chains 27 for rotating the shaft 24.

Fixed to the outer ends of the shaft 24 are sprocket wheels 28, the teeth of which engage the links of the sprocket chains 22, thereby causing the chains to travel when the sprocket wheels 28 are rotated. The sprocket wheels 28 are provided with radial slots 29 which are adapted to be engaged by the ends of the flights 23.

Pivotally connected to the lower ends of the side bars of the elevator 18 is a scoop 30, provided with a point 31 for engaging the earth. Adjusting bars 32 have their lower ends pivotally connected to the scoop, and are connected in any suitable manner to the sills 3, whereby the scoop may be adjusted to regulate the cutting depth of the point 31.

A chute 33 is suitably connected to the upper end of the elevator 18 so that the

earth from the elevator may be discharged at one side of the ditch during the ditching operation.

Journaled transversely of the sills 2 is a shaft 34, the lower end of which is provided with a ground wheel 35, which serves to prevent the frame from tilting when the same is being moved from place to place. It will be noted that the shaft 34 is in the nature of a crank shaft and has connected thereto a hand lever 36, which serves to rock the shaft to raise or lower the wheel 35 so that the tilted position of the frame can be regulated.

Supported by the sills 2 and 3 of the frame are vertically disposed rollers 37, which engage the sides of the ditch during the operation of the machine so as to prevent the same from tilting.

The sills 3 have fixed thereto and in advance of the point 31, shovels 38, which aid in loosening the earth.

From the foregoing description it will be seen that a ditching machine has been provided so constructed that the front thereof may be raised or lowered to regulate the cutting depth of the scoop. It will be further noted that the machine necessitates the use of two supporting wheels 10 and 11, which are alined, thus greatly reducing the expense of the machine, but in no way affecting the operation thereof.

In operation the ground wheel 35 is adjusted so that it will run upon the ground adjacent the side of the ditch being dug, and can be locked in adjusted positions upon shifting the lever 36.

What is claimed is:—

In a machine of the character described, a vertically disposed frame, a ground wheel mounted at the longitudinal center of said frame at its rear end, a front guide wheel forwardly of the frame, a bracket mounted on the forward end of the frame and having a vertically disposed sleeve at the longitudinal center of said frame, a wheeled fork supporting the front guide wheel and having a stem slidably and rotatably journaled in the sleeve, a toggle pivotally connected for vertical movement to the sleeve and loosely connected with the stem of the fork for imparting sliding movement thereto and permitting free rotation of the same, hand operable means mounted in the frame and connected with the toggle to operate the same, a side wheel arranged medially of the frame at one side thereof, a support horizontally pivoted in the frame and forming a journal for the side wheel, means for moving said support, and means for locking the first and last named means in adjusted position.

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

MELVIN C. McLAUGHLIN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."