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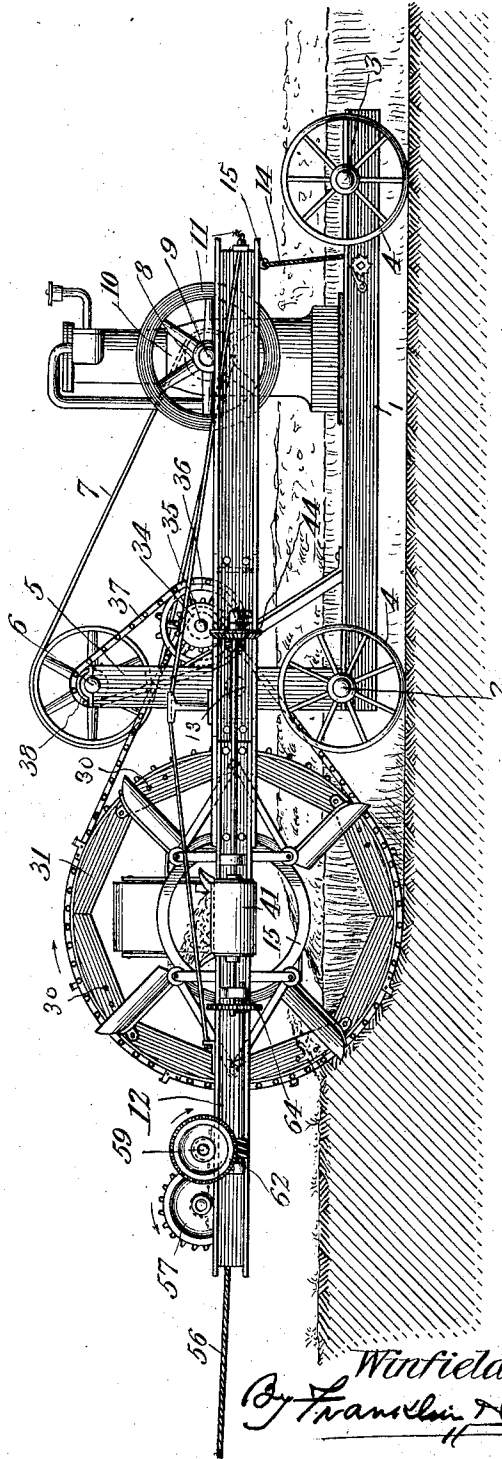
APPLICATION FILED FEB. 9, 1912.

1,044,279.

Patented Nov. 12, 1912.

4 SHEETS-SHEET 1.

Fig. 1.



WITNESSES

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4 SHEETS—SHEET 2.

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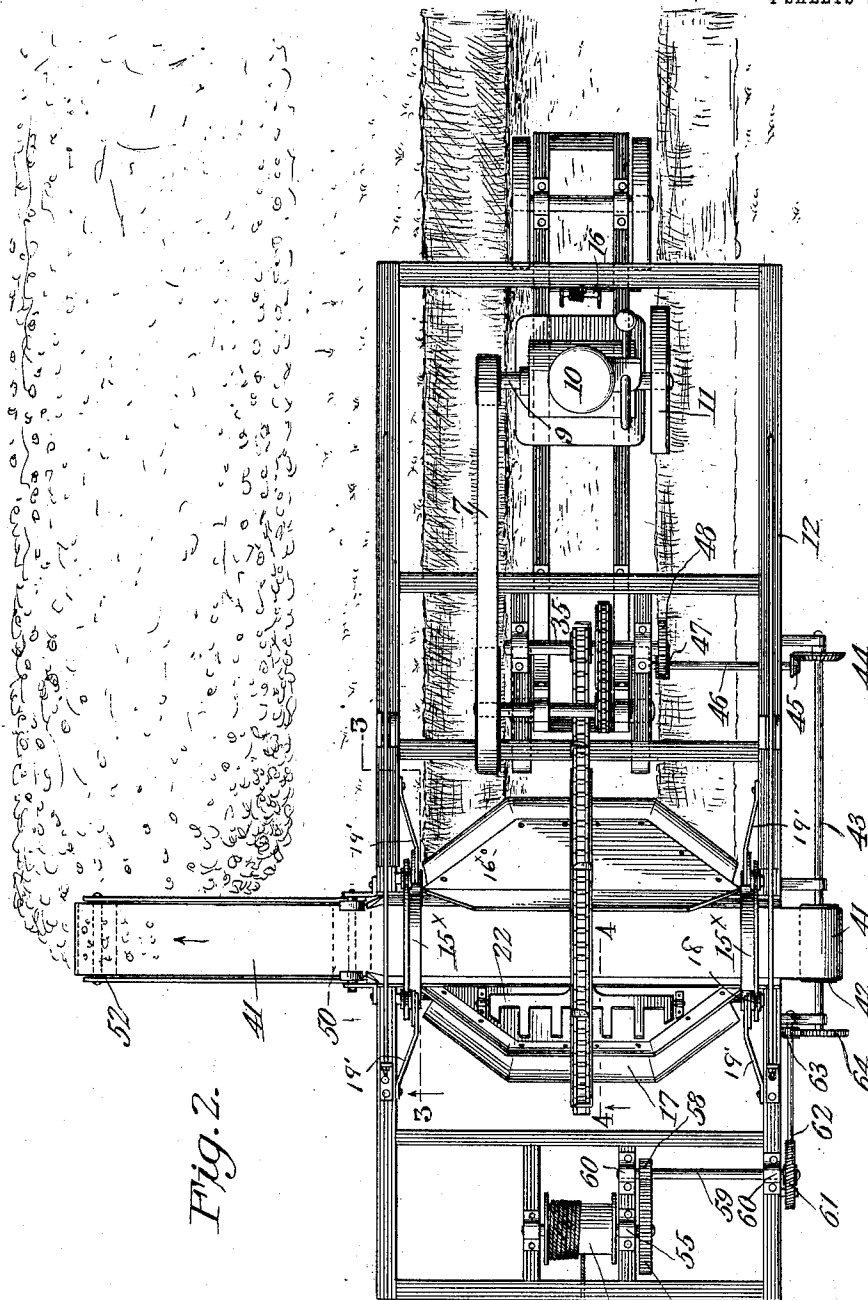


Fig. 2.

WITNESSES

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4 SHEETS—SHEET 3.

Fig. 3.

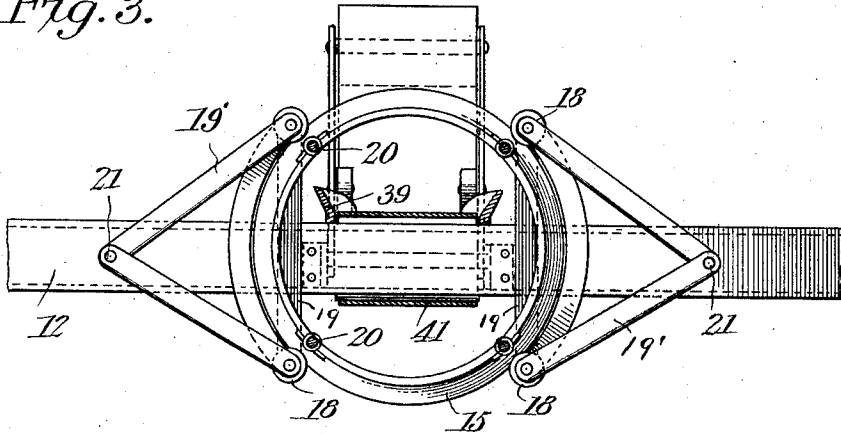


Fig. 4.

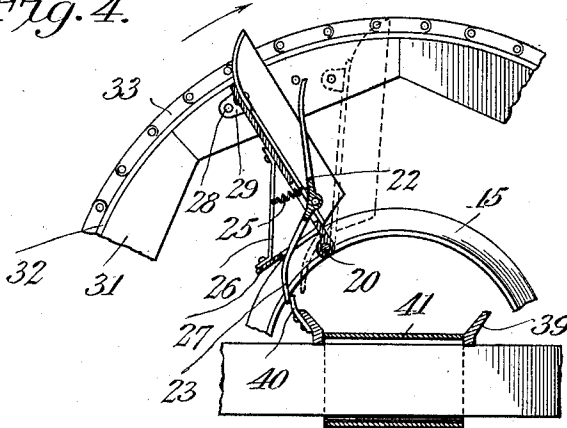
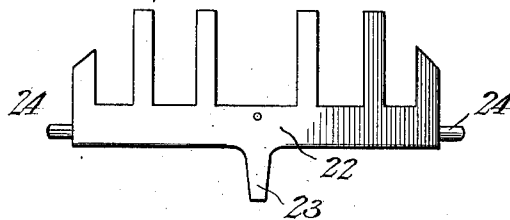


Fig. 5.



WITNESSES

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4 SHEETS—SHEET 4.

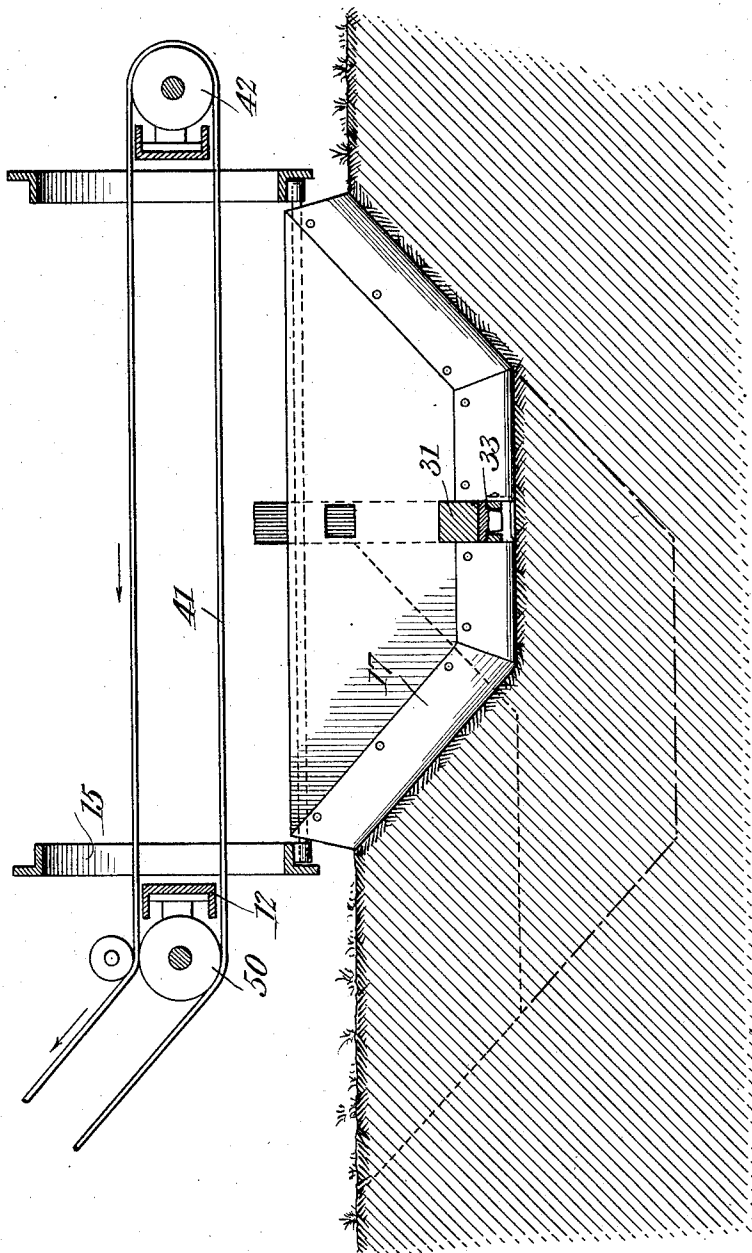


Fig. 6.

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UNITED STATES PATENT OFFICE.

WINFIELD SCOTT SMITH, OF FOREST, OHIO, ASSIGNOR OF ONE-HALF TO ANDREW
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1,044,279.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed February 9, 1912. Serial No. 676,505.

To all whom it may concern:

Be it known that I, WINFIELD SCOTT SMITH, a citizen of the United States, residing at Forest, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Excavators; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in excavating apparatus and comprises a simple and efficient device of this nature having various details of construction and combinations and arrangements of parts which will be hereinafter fully described, shown in the accompanying drawings, and then specifically defined in the appended claim.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the apparatus. Fig. 2 is a top plan view. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 2. Fig. 5 is a detail view in elevation of one of the scoop cleaning devices, and Fig. 6 is a cross sectional view showing the application of the invention in cutting ditches of different depth.

Reference now being had to the details of the drawings by numeral, 1 designates a truck carrying the rotatable shafts 2 and 3 which have keyed thereto the wheels 4. Rising from said frame are the standards 5 in which a shaft 6 is journaled in suitable bearings, having belted connections 7 with the pulley 8 fixed to one end of the motor shaft 9 of the motor 10, a fly wheel 11 being fastened to the other end of said motor shaft. A second frame, designated by numeral 12, is pivotally mounted upon the shaft 13 and is adapted to be held in different tilted positions through the medium of the cable 14 which is fastened to an eye 15 at one end of the frame and winds about a reel 16, journaled in the frame 1 and shown in Fig. 2 of the drawings.

A cylindrical excavator comprises circu-

lar flanged ends 15* connected by angle irons 16* and a series of excavating scoops, designated by numeral 17, are pivoted upon the shafts 20 carried by the circular flanged ends 15*. Said cylindrical excavator is supported by the anti-friction wheels 18, shown clearly in Fig. 3 of the drawings, and which are mounted upon the bars 19, to which the ends of the braces 19' are secured, and which braces are also fastened to the frame 12 through the medium of the pins 21. A series of scoop cleaners, one of which is shown in Fig. 5 of the drawings and designated by numeral 22, is provided, one of said cleaners having an integral finger 23 and pivotal pins 24 at the ends thereof, which latter are mounted, one upon each of said scoops. A spring 25 is fastened to each cleaning member 22 and its rear end to a brace 26 which is fastened at one end to the scoop and its other end to a projection 27 thereon. It will be noted that each of the excavating scoops may be held in different adjusted positions, as shown in Fig. 4 of the drawings, by bolts 28 passing through a lug 29 and held in one or another of the apertures 30 formed in the flange 31 about the inner periphery of a centrally disposed sprocket-driving wheel 32. The end of each scoop projects beyond the periphery of the wheel 32 and a sprocket chain 33 passes about the wheel 32 and also about a sprocket wheel 34 upon the shaft 35, which latter has fixed thereto a sprocket wheel 36 driven by a sprocket chain 37 which also passes about a sprocket wheel 38 upon the shaft 6.

A transversely disposed conveyer trough, designated by numeral 39, passes through the cylindrical excavator and a stop 40 is fastened to one edge of the trough, as shown in Fig. 4 of the drawings, and in the paths of the fingers 23 upon the scoop cleaners and affords means whereby, as each scoop passes over the conveyer trough, the finger 23 will contact with said stop and cause the material being scooped up to be dumped on to the conveyer 41 and conveyed laterally, as shown in Fig. 2 of the drawings, and deposited. The conveyer 41 is mounted upon the drum 42 fixed to the shaft 43 and also about drums 50 and 52. The shaft 43 has a beveled gear 44 keyed thereto which is in mesh with a beveled pinion 45 fixed to the end of the shaft 46. The shaft 46 has a

gear wheel 47 rotating therewith and which is in mesh with a driving gear 48 secured to the shaft 35.

Mounted upon a winding drum 54 having 5 spindle ends mounted in bearings 55 upon the frame a cable 56 winds, one end of which is adapted to be fastened to a stationary object. A gear wheel 57 is fixed to one of the spindle ends of the drum 54 10 and is in mesh with a pinion 58 which is fixed to the shaft 59, which latter is journaled in bearings 60 upon the frame 12. A worm wheel 61 is fixed to the shaft 59 and is in mesh with a worm 62 which has 15 a gear wheel 63 also fixed thereon in mesh with a gear wheel 64 upon the shaft 43, thus affording means whereby power may be applied to the drum 54 for the purpose of winding the cable thereon to advance the 20 machine.

The operation of the apparatus will be readily understood and is as follows:— Power is communicated from the motor to drive the cylindrical excavator, causing the 25 scoops to dig into the soil and elevate and dump the same into the conveyer, the cleaning member 22 being tilted to cause the material to be thrown from the scoop as the finger 23 comes in contact with the stop 30 40 upon the edge of the trough. Power is communicated to the conveyer through the medium of the shaft 43 described and also to the drum 54, causing the machine to be moved forward while in operation, thus 35 cutting a ditch of the shape shown in Fig. 6 of the drawings with a flat bottom and inclined walls, said shape being governed by the shape of the excavator plates upon the

scoops. After a ditch of the form shown has been formed, the apparatus may be po- 40 sitioned so as to excavate deeper, by cutting out a portion shown by dotted lines in Fig. 6 of the drawings, and afterward the ditch may be lowered by causing the apparatus to be moved centrally over the part already 45 excavated and the marginal edges of the cutting blades being in line with the bevel upon the sides of the ditch as shown.

By the provision of the tilting frame 12, which may be thrown to different inclina- 50 tions through the medium of the cable 14 winding upon the drum 16, the depth at which it is desired to excavate may be regulated by causing the scoops to dip at different depths. 55

What I claim to be new is:—

An excavating apparatus comprising a truck, a movable frame thereon, an excavator, bars arranged in pairs with their inner ends fastened to each other and to 60 said frame, a grooved anti-friction roller journaled at the outer end of each bar, a circular ring fastened to each end of the excavator and having flanges engaged by said friction wheels and which support the 65 excavator, a bar fastened vertically to the ends of the friction wheel carrying bars, scoops mounted upon said excavator, and means for rotating the latter, as set forth.

In testimony whereof I hereunto affix my 70 signature in the presence of two witnesses.

WINFIELD SCOTT SMITH.

Witnesses:

JERRY GARN.

WALTER H. PHELPS.