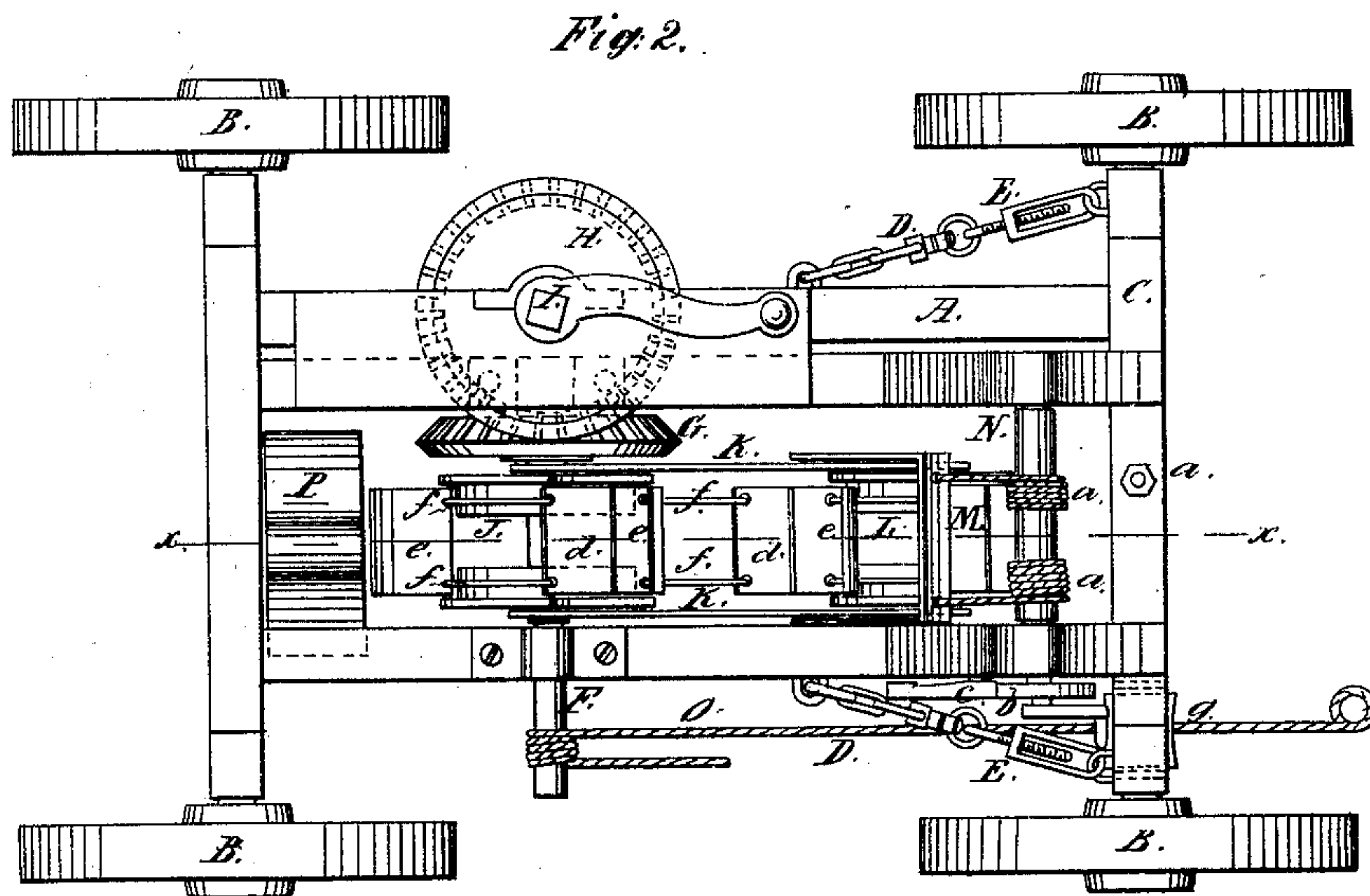
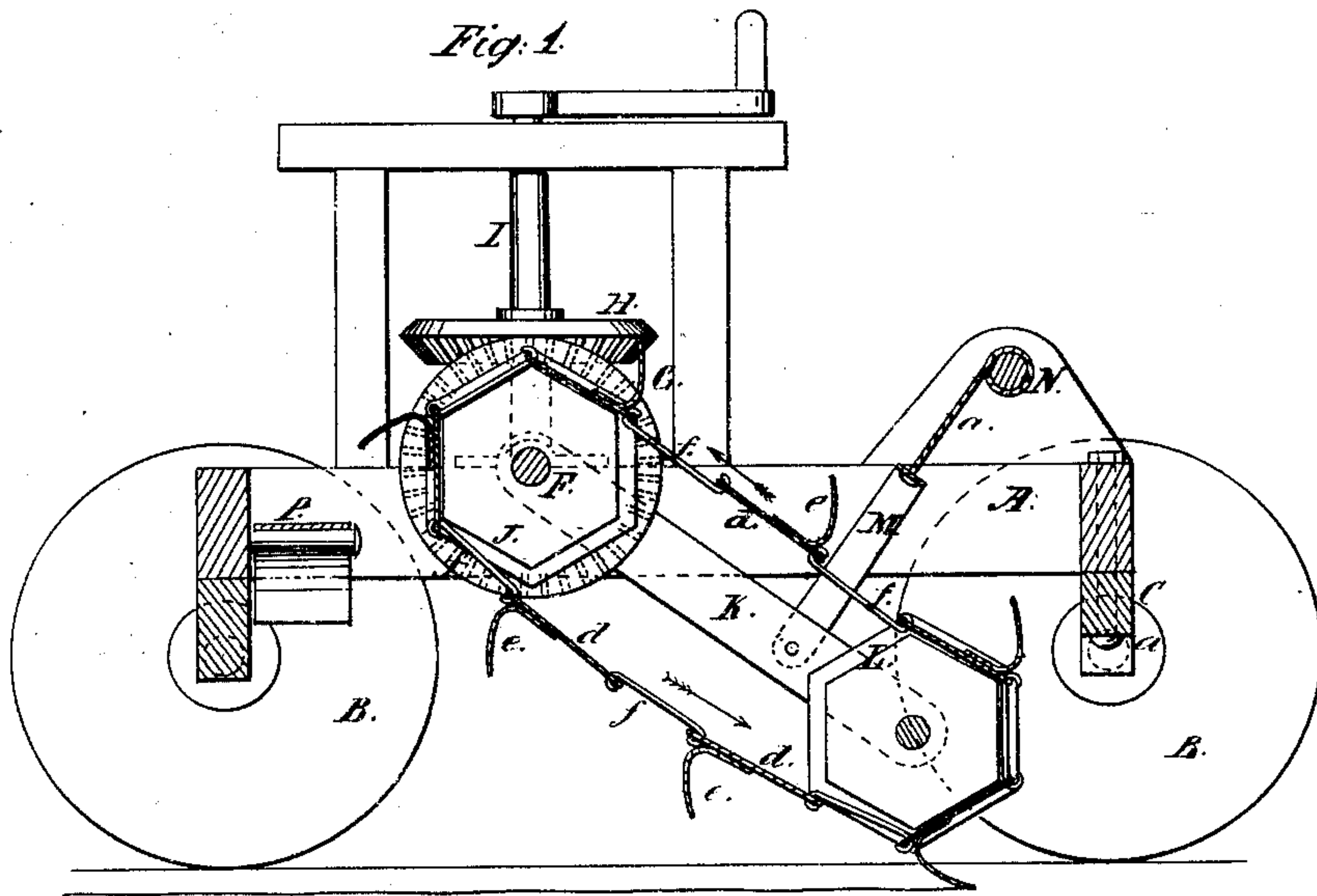


*A. La Turrette.*

*Excavator.*

*N<sup>o</sup> 69,682.*

*Patented Oct. 8, 1867.*



*Witnesses.*

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# United States Patent Office.

A. LA TOURRETTE, OF WATERLOO, NEW YORK.

Letters Patent No. 69,682, dated October 8, 1867.

## IMPROVED DITCHING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. LA TOURRETTE, of Waterloo, in the county of Seneca, and State of New York, have invented a new and improved Ditching Machine, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

This invention relates to a new and improved machine for making ditches, and it consists of a novel arrangement of an endless chain of spades or scoops, whereby the latter may be adjusted to excavate the earth at a greater or less depth, as may be desired, the machine rendered capable of extricating itself with the greatest facility, in case of the spades or scoops meeting with an obstruction, and also allowed to travel and work in a curved path, in cases where a curved ditch is required. In the accompanying sheet of drawings—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, fig. 2.

Figure 2, a plan or top view of the same.

Similar letters of reference indicate like parts.

A represents a rectangular frame, which is mounted upon four wheels B, the front axle C being attached to the frame by a king-bolt, *a*, in the same way as the front axles of the generality of four-wheel vehicles. The front axle C, however, is limited in its turning movement on its king-bolt by means of chains D D attached to the axle, one near each end, and to the sides of the frame A, each chain being provided with a screw-swivel, E, by which the chains may be lengthened or shortened, as occasion may require. On the frame A there is placed a horizontal shaft, F, having a bevel-wheel, G, keyed upon it, and into which a similar wheel, H, gears on the lower part of a vertical shaft, I, the bearing of which is an upright support on the frame A, and has a sweep on its upper end, to which the team is attached. On the shaft F there is keyed a polygonal drum, J, and on said shaft there are placed loosely the upper ends of two bars K K, having a polygonal drum, L, fitted between their lower ends. The drum J, like the drum L, is between the bars K K, and said bars, near their lower end, have a rail, M, attached, which is connected by chains or ropes *a a* to a windlass, N, on the front part of the frame A, the windlass-shaft having a ratchet, *b*, at one end, into which a pawl, *c*, catches. Over the two polygonal drums J L an endless chain of spades or scoops works. The spades or scoops are constructed of metal plates *d*, (cast iron will answer,) and to these plates there are secured, by bolts or otherwise, curved plates *e*, which are the spades or scoops proper, and which are equal in width to the plates *d*. The plates *d* are connected together near their sides by links *f*, which are equal in length to the plates, the plates *d* and links *f* being equal in length to the sides of the polygonal drums J L. O represents a rope, which is attached to a stake firmly driven in the earth some distance ahead of the machine, and passes underneath a roller, *g*, at the under side of the front axle, and is wound several times around the end of the shaft F, which projects from the side of the frame A, the operator having hold of the outer end of the rope. The horse or team travels around the machine, the ditch at the rear of the machine having a bridge or plank placed over it for the horse or team to walk over, a bridge being also placed over the rope in front of the machine. The endless chain of spades or scoops is moved by the gearing and drums in the direction indicated by the arrows in fig. 1, and the spades or scoops are made to excavate the desired depth by raising or lowering the drum L, through the medium of the windlass N. The machine is fed along to its work by the action of the shaft F on the rope O, said rope being kept tight on the shaft by the pull of the operator. In case of the spades or scoops coming in contact with any obstruction, such, for instance, as a stone or stump, the operator slackens the rope O, and by that means checks the feed or forward movement of the machine, and causes it to "back" so that the spades or scoops will clear themselves. The spades or scoops discharge the earth upon a curved plate or board, P, which causes it to fall at either side of the ditch. In case the ditch is to be cut in a straight line the front axle C is secured in line with the front end of the frame A, and parallel with the rear axle, the chains D D being made of equal length; but in case the ditch is to be cut in a curved line, the front axle C, by lengthening one of the chains D, is made to assume a radial position with the circle of which the ditch is to form a part, supplemental stakes being driven in the earth in front of the machine, and in the line of the curve in which the ditch is to be cut,

the supplemental stakes serving as a guide for the rope O in front of the machine. These stakes are removed as the machine reaches them in the prosecution of its work.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. The combination in a ditching machine of the endless chain *d f*, curved spades or scoops *e*, bars K K, drums J L, propelling shaft and rope F O, gearing G H, sweep-shaft I, chain D E, and the parts M N *a*, or their equivalents, for regulating the penetration of the spades, all arranged and operating substantially in the manner herein set forth.

2. In a ditching machine constructed and operating as herein described, I claim the extensible chains D E applied to the front axle, in the manner and for the purpose set forth.

Witnesses:

L. H. DAY,

E. A. TAYLOR.

A. LA TOURRETTE.