

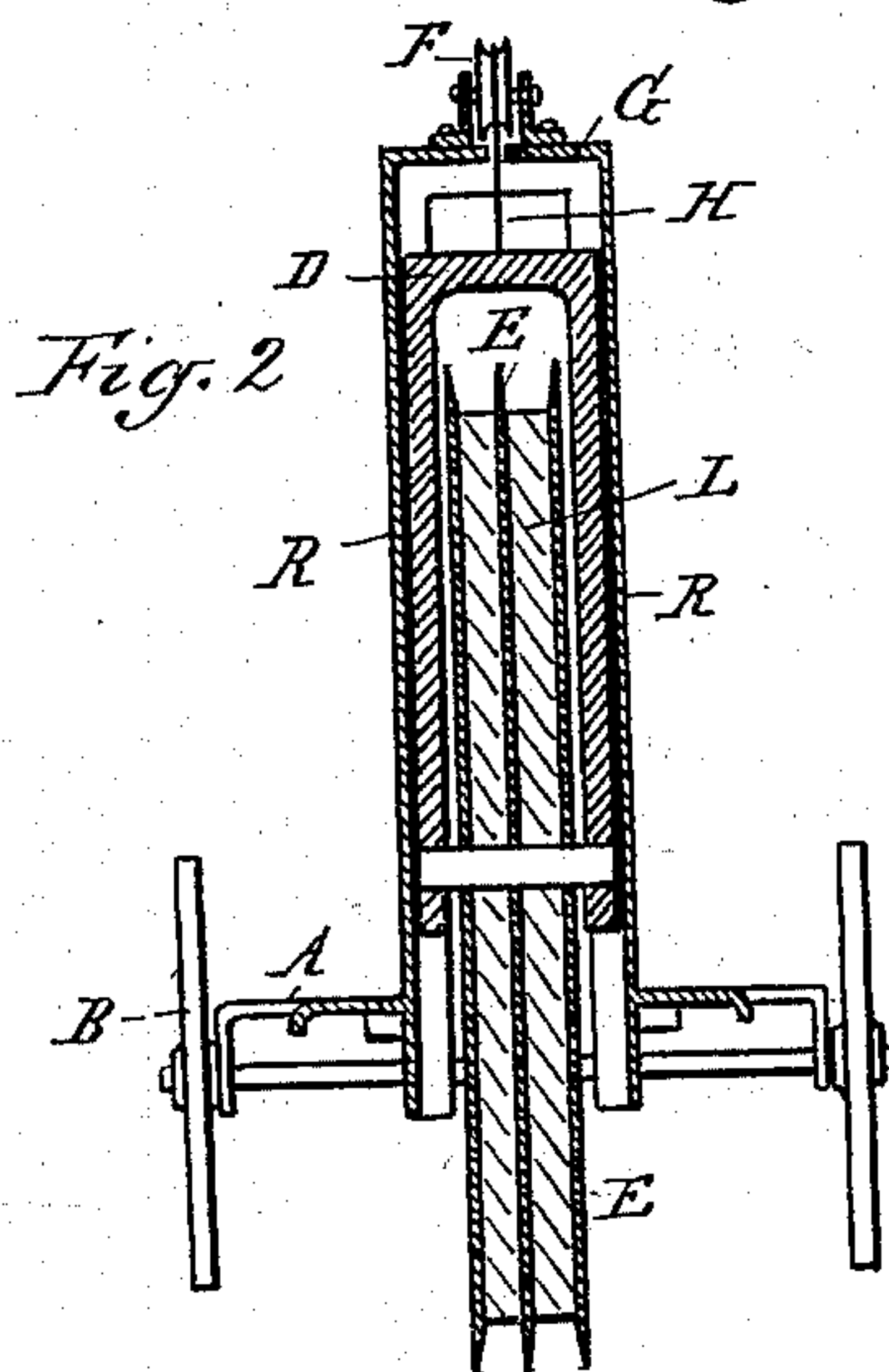
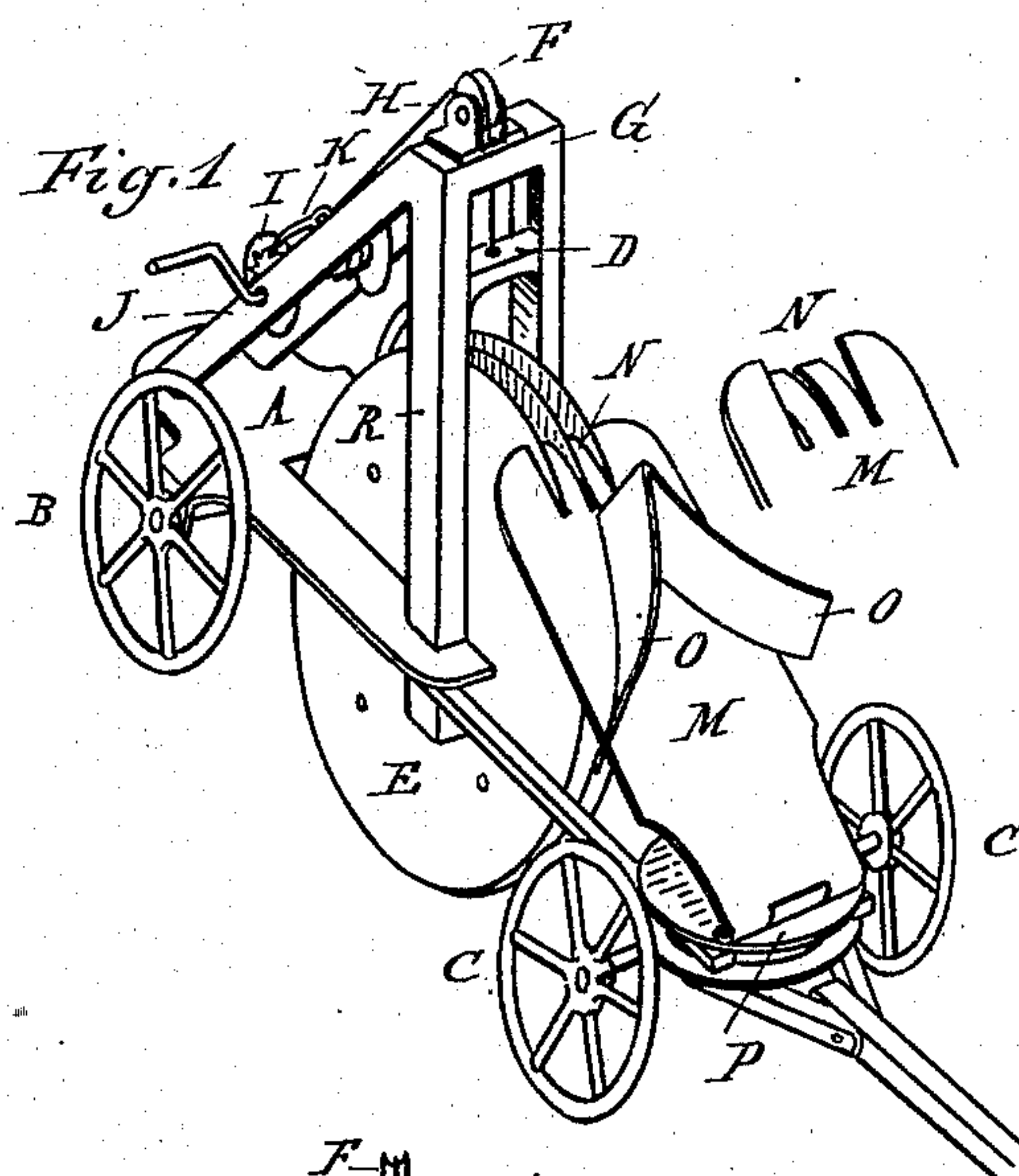
(No Model.)

R. H. NOGAR.

ROTARY TILE DITCHING MACHINE.

No. 284,320.

Patented Sept. 4, 1883.



Attest:

A. Barthel  
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*Inventor:*

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by his Atty Thos S. Sprague



# UNITED STATES PATENT OFFICE.

RUSSELL H. NOGAR, OF DUNDEE, MICHIGAN.

## ROTARY TILE-DITCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 284,320, dated September 4, 1883.

Application filed March 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, RUSSELL H. NOGAR, of Dundee, in the county of Monroe and State of Michigan, have invented new and useful Improvements in Rotary Tile-Ditching Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to certain new and useful improvements in the construction of ditching-machines, such as are employed in preparing the ditch in which to lay tile-drains.

15 The invention consists in the peculiar and novel construction of its parts, and their combination and operation, as more fully hereinafter described and claimed.

20 Figure 1 is a perspective view of my improved machine. Fig. 2 is a section through the cutting-wheel.

In the accompanying drawings, which form a part of this specification, A represents a bed, which is supported upon an axle and suitable wheels, B, this frame or bed being pivotally connected with a forward axle and wheels, C, in any of the known ways. Rising from and rigidly secured to this bed are the two upright guides R, within or between which are vertical slides, connected together at top by the cross-head G, and the wheel E is suitably journaled to and between these slides. To allow this wheel to be vertically adjusted to any desired height I attach a pulley or sheave, F, to the cross-girt D, which binds the tops of the two slide-guides together. A cord, H, is connected to the cross-head, and thence leading over the pulley is connected to the winch I, which is journaled in and between the braces J. A ratchet and pawl, K, controls the operation of the cord as desired.

40 The wheel E is constructed of two outer and one central disk, all of the same diameter, and journaled upon the same shaft. Between these disks there are plates L, which preserve the proper distances between the disks, and at the same time govern the depth of earth to be taken up. These disks all have cutting-edges, that of the center one being had by making both sides thereof beveling, and the outer disks being made by beveling only their inner faces, leaving their outer faces upon a vertical plane.

M is a plate provided with tongues N, which project between the disks, and outside thereof, to detach the earth therefrom. The interior tongues turn downward until the ends rest upon the plates which separate the disks, and strip the earth therefrom and conduct the same to the plate M, down which it slides to the ground, wings O being attached thereto to guide the falling earth to each side of the machine. The plate M is secured to the disk P, which forms the fifth-wheel of the device, and also acts as a protector, to prevent dirt from interfering with the free turning of the forward axle.

65 In practice the wheel is let down until its disks enter the ground to the depth of the dividing-plates, when, the machine being advanced, the wheel cuts the earth into ribbons of the width between the disks, and the depth of the channels formed by the dividing-plates, and in the further rotation of the wheel these ribbons are brought up and, by the means described, delivered upon the ground. To increase the width of the ditch, other disks similar to the central one may be added.

I attach importance to the fact that the clearer M is hinged, as shown, so that it may readily be thrown out of operation when desired.

80 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a ditching-machine, substantially as described, and in combination with a wheel composed of cutting-disks E, arranged with alternate plates, the clearer M, hinged as shown, and having spring-fingers N and deflecting-wings O, as set forth.

2. In a ditching-machine, substantially as described, and in combination with the carriage having a fifth-wheel, and the wheel composed of alternate cutting-disks E and plates L, the clearer M, secured to the disk P of said fifth-wheel, and having spring-fingers N and deflecting-wings O, whereby the fifth-wheel is protected from falling dirt, &c., as set forth.

RUSSELL H. NOGAR.

Witnesses:

H. S. SPRAGUE,  
E. W. ANDREWS.