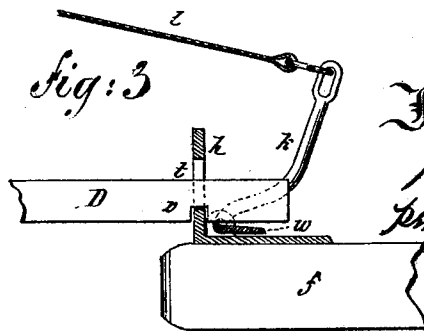
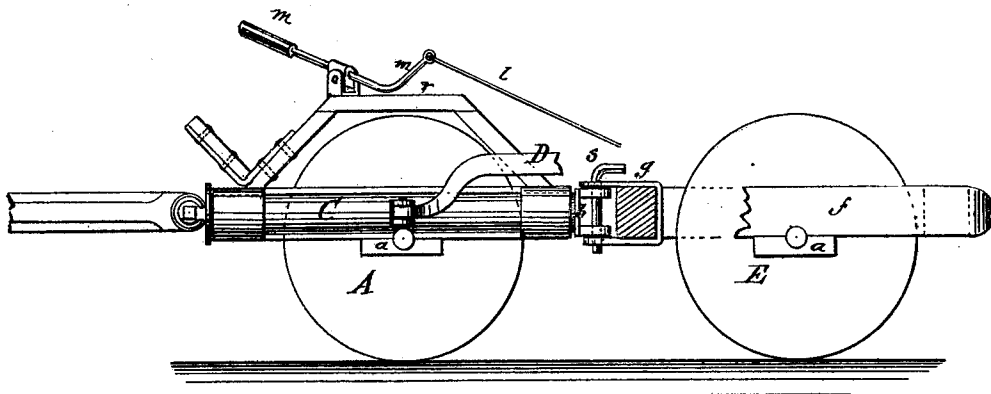
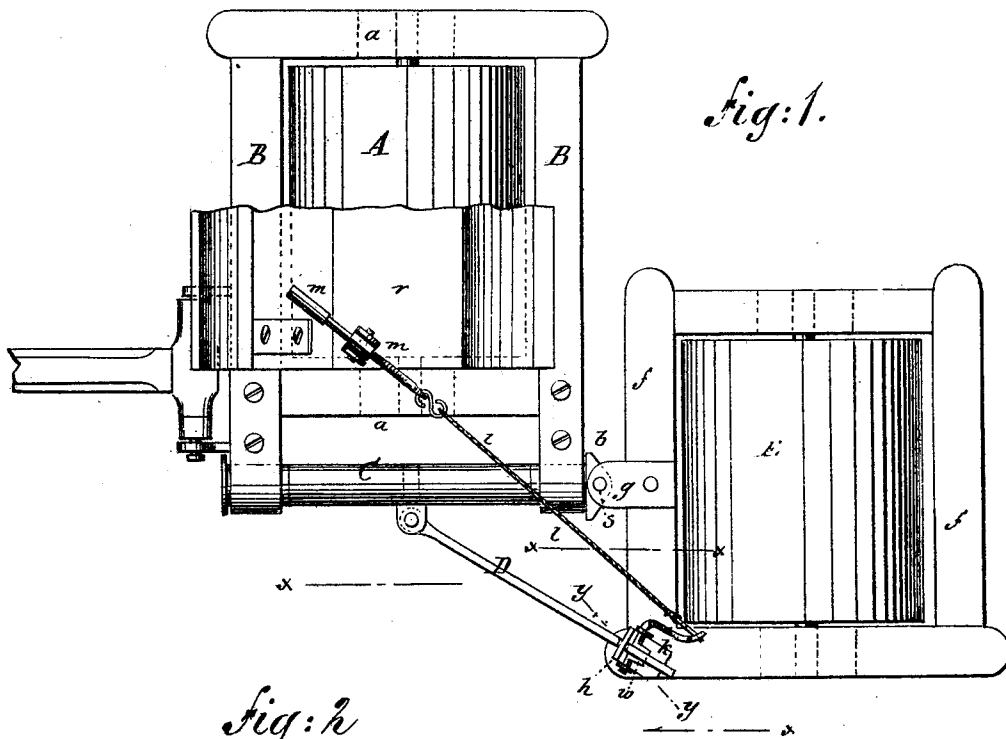


N. N. LORD.
LAND-ROLLERS.

No. 185,557.

Patented Dec. 19, 1876.



Witnesses:
H. L. Maltby
W. Lovell

Inventor:
Nathan N. Lord
per [Signature]
Atty.

UNITED STATES PATENT OFFICE.

NATHAN N. LORD, OF BROWNVILLE, NEW YORK.

IMPROVEMENT IN LAND-ROLLERS.

Specification forming part of Letters Patent No. 185,557, dated December 19, 1876; application filed May 15, 1876.

To all whom it may concern:

Be it known that I, NATHAN N. LORD, of Brownville, in the county of Jefferson and State of New York, have invented a new and Improved Land-Roller; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in land-rollers; and the invention consists in two land-rollers coupled together, one in the rear and on one side of the center of the other, the coupling being combined with a rocking-shaft.

The invention also consists in a lever secured at one end to a rocking-shaft on one roller, and the other end arranged and combined with a lever-cam and cord, whereby the rollers may be allowed to accommodate themselves to the inequalities of the surface of the ground.

In the accompanying sheet of drawings, Figure 1 is a plan or top view of my improved rollers; Fig. 2, a side view, partly in section, and Fig. 3, a section in line *y y*, Fig. 1, showing detail of lever, cam, &c.

Similar letters of reference indicate like parts in the several figures.

It is, of course, desirable in rolling land that the track rolled by each passage of the roller should be as wide as possible, in order to expedite the proceeding; but this width of track is necessarily limited to the length of the roller used, and the length of the roller is limited by the disadvantages resulting from drawing, turning, and rolling uneven surfaces with a roller of unusual length. These difficulties, it is believed, are remedied by my invention, as will be seen from the following description:

A represents a roller, which may be of any convenient size, and made of any suitable material. This roller is supported in suitable bearings *a*, and thereby secured to a frame-work, B, within which it revolves when in use. To the frame B and resting in suitable bearings is fitted a rocking-shaft, C. This rocking-shaft has secured to it, at one of its ends, one part of a coupling, *b*, and to this shaft, midway between its ends, is affixed one end of a lever, D. In the rear of the roller A, or

rather its surrounding frame, is placed a second roller, E. This second roller is like the roller A, and is surrounded by a similar frame. To the frame-work *f* of this second roller, and midway from its ends, are secured the jaws *g* of a coupling, to receive the other part of the coupling *b*, before referred to; and to the frame-work *f*, near its front end is affixed a slotted plate, *h*. This plate is at right angles to the frame, and has fastened to its rear side a lever, *k*, which is kept in position by proper bearings, within which it may rock. To the other end of this lever *k* is attached a cord, *l*, extending and secured to a second lever, *m*, which last-named lever is fastened to the top of the box *r*, which incloses the upper half of the roller A, and on which the driver sits.

My rollers, constructed as above described, are operated by coupling them together by connecting the parts *b* and *g* with a pin, *s*, one end of the lever D passing into the slot *t* of the plate *h*. Near the end of this lever, and on its lower edge, is formed a notch, *v*, into which the lower edge of the slot *t* enters, and when the lever is so engaged in the slot the two rollers are locked, as it were, in such manner as to hold them perfectly rigid together, as much so as if both rollers were in one frame, and in this condition the rolling over level ground is accomplished the same as with an ordinary roller. But when the surface of the ground becomes irregular then, as the forward roller A tilts or inclines to the irregularities, the cord *l* is necessarily shortened, thereby drawing up the lever *k*, which causes a small cam, *w*, to rise up and lift the notch *v* in the lever D clear from the bottom of the slot *t*, which permits the lever D to freely slide in and out of the slot. By this means the rollers are enabled to accommodate themselves to irregularities of surface, stones, &c., without imposing undue strain upon the team, and also to be easily turned. The operation of the lever D may be automatic, as just described, or it may be regulated by the driver with the lever *m* on his seat. The tilting of the rolls to the irregularities is facilitated by the rocking-shaft C, to which one part of the coupling is secured, thus permitting the coupling to have a rotary motion as well as a lateral one.

The rear roller is so placed in its relation

to the front one that the track rolled is the same as if made by a continuous roller of the same length as the two combined—that is, the end of one roller overlaps, as it were, the end of the other.

The pole is secured to the frame of the front roller by a hinge-joint, whereby the horses are saved from much strain.

Having thus described the construction and operation of my improved roller, what I claim as new, and desire to secure by Letters Patent, is—

1. In a double land-roller, the rocking-shaft C combined with lever D and coupling *b g*, substantially as and for the purpose described.

2. In a double land-roller, the rocking-shaft C combined with lever D, slotted plate *k*, cam-lever *k*, and cord, substantially as and for the purpose described.

NATHAN N. LORD.

Witnesses:

ROBERT YOUNGER,
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