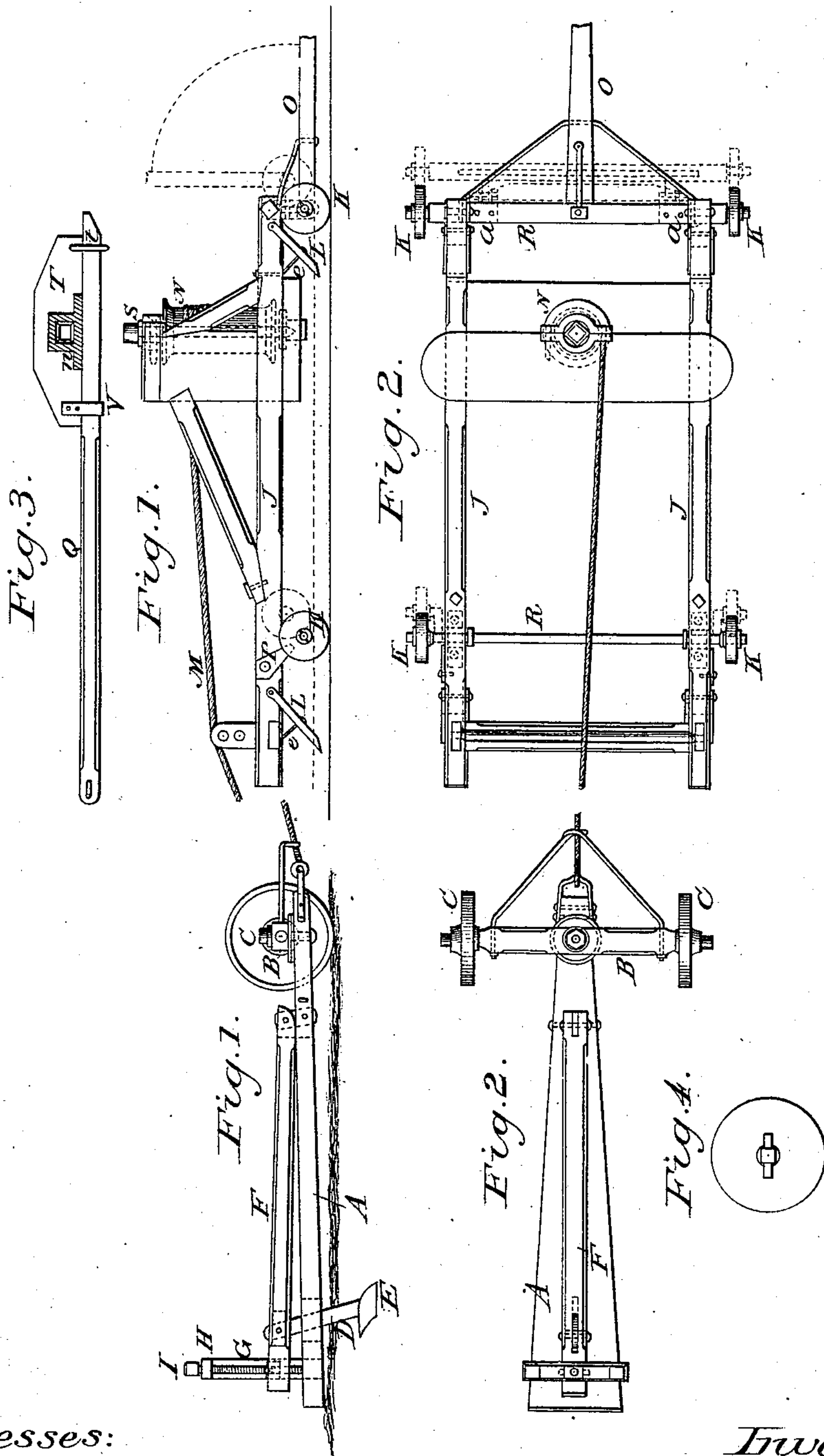


A. PETERSON.
Ditching Machine.

No. 106,721.

Patented Aug. 23, 1870.



Witnesses:

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ALFRED PETERSON, OF STOCKWELL, INDIANA.

Letters Patent No. 106,721, dated August 23, 1870.

IMPROVEMENT IN MOLE-DITCHING MACHINE.

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

I, ALFRED PETERSON, of Stockwell, in the county of Tippecanoe and State of Indiana, have invented certain Improvements in Mole-ditching Machines, of which the following is a specification.

Nature and Objects of the Invention.

The first part of my invention relates to construction and arrangement of the frame-work to which the cutter-bar and mole are attached, with the arrangement of an adjusting-screw for regulating the depth to which the mole enters the ground, and the peculiar form of the mole, the object of this part of my invention being to compact the earth firmly against the top and sides of the drain, while the bottom is left unpressed and porous, to admit the water.

The second part of my invention relates to construction and arrangement of the trucks upon which the capstan is mounted that is employed to operate the mole-ditcher, and to the construction of the lever for operating the capstan, the object being to provide for an easier and more expeditious removal of the capstan forward as the ditcher is drawn up to it.

Description of the Accompanying Drawing.

Figure 1 is a side elevation of a mole-ditching machine and removable capstan embodying my invention.

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

Figure 3 is a plan view of the lever for operating the capstan.

General Description.

The ditcher is composed of the beam A, the forward end of which is supported by the axle and trucks B C, the cutter D and mole E, attached by the upper end to the piece F, which is hinged at its forward end to the beam A, as shown, the uprights G, cross-beam H, and adjusting-screw I.

The beam A is made broad at the rear end, to have a bearing upon the ground, in order to prevent the beam A from canting or tripping, and this, combined with the manner of attaching the beam to the axle B, supports the cutter D in an upright position.

The forward end of the beam is also hung to the under side of the axle B, so as to bring it as close to the ground as practicable, the design being to support it about three inches off the ground.

The upper end of the cutter-bar D is pivoted in the piece, as shown, and the position of the latter is regulated by means of the adjusting-screw I.

The mole E is so formed and attached to the cutter-bar, and the latter is attached to the frame in such a manner that, as they are drawn through the ground, the upper part of the mole presses or compacts the earth in the upper part of the drain, so as to form a

compact arched earthen support thereto, at the same time leaving the bottom of the drain uncompressed, and hence porous, to admit the free ingress of the water from the bottom of the drain, thus avoiding danger of its being disintegrated or washed out by an excess of water.

The capstan is mounted on a frame, J, the latter being supported on wheels K, to make it easily transportable.

The forward axle is hung by ears, attached to its top and pivoted in the forward ends of the side timbers of the frame, as shown, so arranged that the axles and trucks may be turned up, as indicated by the dotted lines in figs. 1 and 2.

The rear axle is hung in bearings to the under side of the side-frame timbers, the outer ends of the axle being bent into the form of a crank, so that these wheels may also be turned up, as shown.

The object of this arrangement of the axles is to provide a ready mode of letting the frame J down, so that the feet L will engage with and enter the ground as the draw-rope M is wound upon the spool N, and thus hold the capstan firmly in position, and also so that, when it is desired to move the capstan forward, by turning the forward wheels down by means of the tongue O, the forward end of the frame will be raised, and thereby drawing the forward feet L out of the ground.

Now, by starting the capstan-trucks forward, the rear wheels will be turned back by friction upon the ground until the arms of the axle rest against the stops P, at the same time drawing the rear feet L out of the ground, when the truck may be moved forward to the desired position. The lever-bar Q in the meantime having been removed, the rope or chain M is unwound from the spool N as the capstan moves forward. When the capstan-truck has been moved to the position desired, the axles are again turned up, allowing the feet L to enter the ground when the above-described operation is repeated.

The feet L, instead of being rigidly fixed to the frame, as is commonly done, are hinged to the frame, as shown, so that they may fold backward when the capstan-truck is moved forward, thus avoiding the necessity of prying them out of the ground, and thereby facilitating the removal of the capstan. The feet are prevented from turning backward by means of the chains or cords e.

In order to make the wooden spool N upon which the rope or chain M is wound in a substantial manner, and so that it will run as light as practicable, I turn the spool out of a solid stick, and bore out the center to receive the shaft S, which is made with wings or flanges i, grooves being cut in the spool to receive the flanges, as shown in fig. 4.

The lever is made in two parts, the head-piece T having a casting, n, set in its edge, pierced with a square hole to receive the upper end of the shaft.

A stirrup t is attached at one end of the piece to receive the end of the lever-bar Q, and a hooked piece, V, at the other end, to hold it in place, the design of this construction being to secure great strength, combined with convenience for removal of the lever-bar Q, when required.

The advantage claimed for the improvement herein described consists, first, in attaching the mole E directly to the cutter D, and in combination therewith the arrangement of the adjustable piece F, hinged to the beam A, and to which the cutter is attached by its upper end, the whole being designed and arranged to compact the earth in the upper part of the drain in such a manner as to form substantial smooth-arched wall, that will be less liable to disintegrate than drains made by the mole-ditchers heretofore in use; and second, in the arrangement and combination of the hinged

feet L with the axles R and the wheels K, constructed and operating to make the capstan employed to operate the ditcher, so as to render it more easily transportable.

Claims.

I claim as my invention—

1. The mode, formed as shown, and attached to the cutter-bar D, the latter being hung by its upper end to the adjustable piece F, in combination with the beam A, constructed as described, and hung by its forward end to the axle B, all arranged and operating substantially as set forth.

2. The arrangement of the capstan and truck with its feet, as described.

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Witnesses:

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