

A. SPENCER.

Improvement in Ditching Machines.

No. 132,929.

Patented Nov. 12, 1872.

Fig. 1.

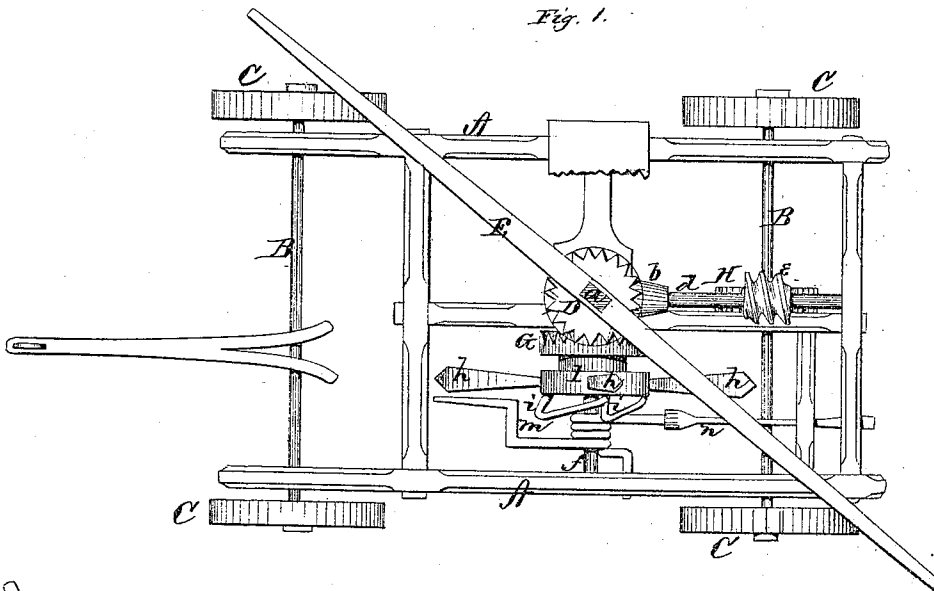
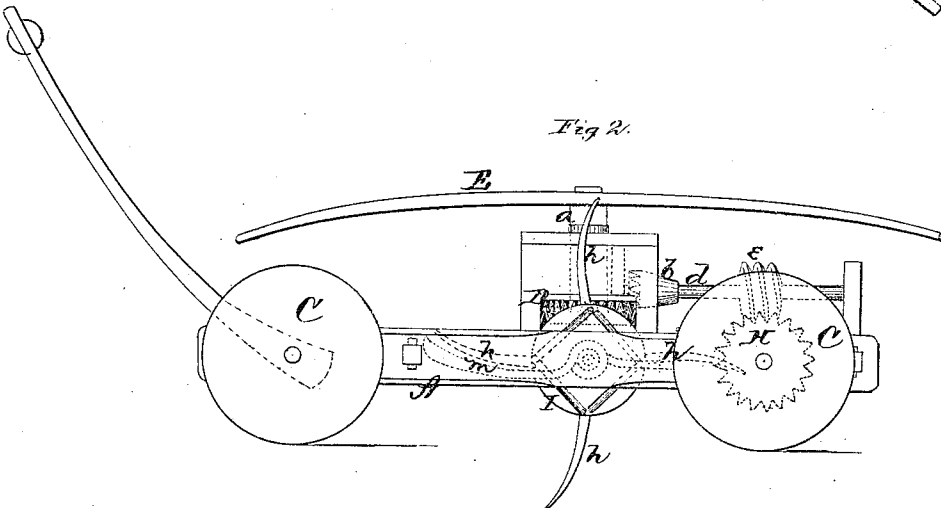


Fig 2.



Witnesses
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IMPROVEMENT IN DITCHING-MACHINES.

Specification forming part of Letters Patent No. 132,929, dated November 12, 1872.

To all whom it may concern:

Be it known that I, ABRAHAM SPENCER, of Grampian Hills, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Locomotive-Ditchers; and do hereby declare the following to be a full, clear, and exact description, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists mainly in the arrangement of the mechanism whereby the ditcher is revolved and at the same time moved forward; and in the construction and arrangement of a spring-scraper for removing the dirt from the diggers.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing which forms a part of this specification, and in which—

Figure 1 is a plan view, and Fig. 2 a side elevation, of my machine.

A represents the frame of my machine, mounted upon an axle, B, and two wheels, C C, at each end. In suitable bearings on the center of the frame A is a short vertical shaft, *a*, with a sweep, E, attached to its upper end, said sweep extending in both directions, so that one or more horses may be attached at each end for operating the machine. On the shaft *a* is placed a double miter-wheel, D—that is, a wheel having two sets of beveled cogs. The lower set of cogs gears with a miter-wheel, G, to impart motion to the diggers, while the upper set gears with a beveled pinion, *b*, on a shaft, *d*, which is provided with a worm, *e*, and this worm meshes with a cog-wheel, H, on the hind axle, and thus propels the entire machine forward. The miter-wheel G is attached to or forms part of a circular head, I, placed upon a shaft, *f*, running parallel with the axles. This head is provided with curved radiating arms *h h*, the outer ends of which should be provided with movable steel bits and thus form the diggers. These steel bits should be

movable, so that they can readily be removed at will, so as to be replaced with others when worn or broken, or exchanged for others of different size. Around the shaft *f* is bent a rod or wire, the front end of which extends forward, forming the scraper *m*, while the rear end is attached to a spring, *n*, as shown in Fig. 1. To the side of the head I are attached a series of inclines or cams, *i i*, corresponding in number with the diggers *h h*.

When the machine is in operation these cams each in succession press outward, the rear end of the scraper causing the scraper proper to be thrown over and on the inside of the digger which is about to come out of the ditch. As this digger gets at or above the top of the ditch the cam clears the rear end of the scraper, and the spring *n* throws the scraper *m* suddenly outward across or rather lengthwise of the digger to the outer side thereof, removing thus the dirt carried up by the same. It will be noticed that the diggers work from the bottom of the ditch upward, and that the machine is propelled forward at the same time as and by the same power that operates the diggers.

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

1. The arrangement of the double miter-wheel D with sweep E, the miter-wheel G for operating the diggers, and the miter-pinion *b* for propelling the machine, through the means of the shaft *d*, worm *e*, and the cog-wheel H, all substantially as herein set forth.

2. The combination of the scraper *m*, spring *n*, and cams *i i*, on the digger-head I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of August, 1872.

ABRAHAM SPENCER.

Witnesses:

J. B. RAFFERTY,
G. P. DINGHMAN.