A. M. NELSON.

Ditching-Machines.

No. 148,080. Patented March 3, 1874.

Fig. 1.

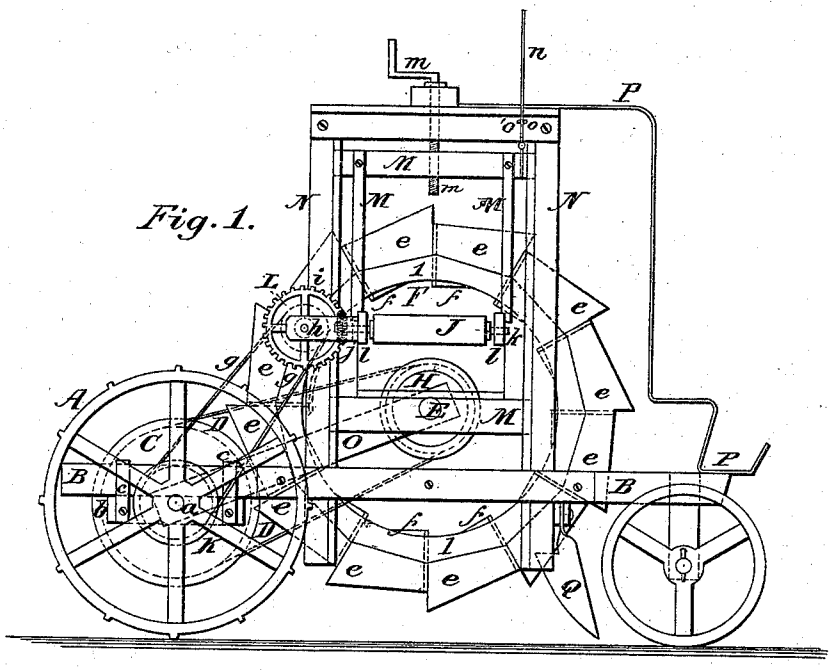


Fig. 2.

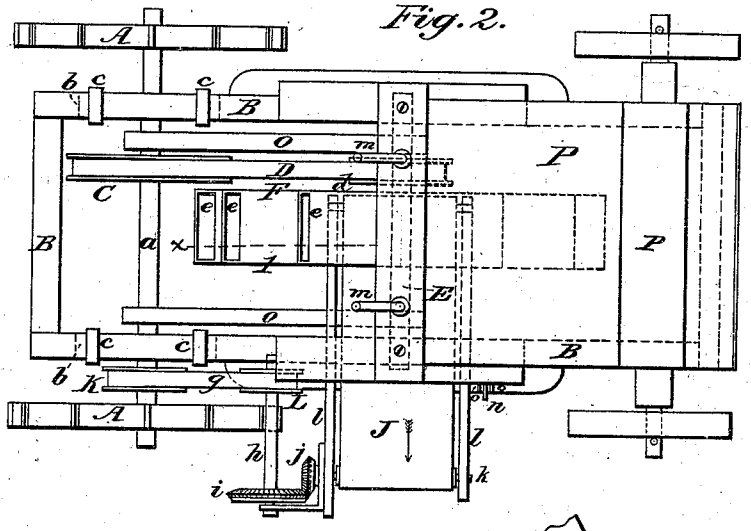
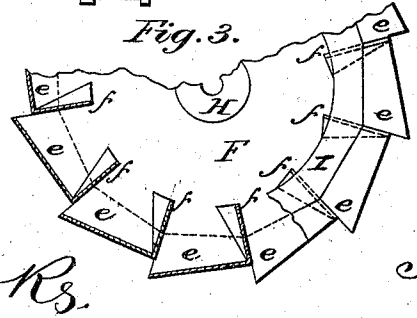


Fig. 3.



Witnesses.

Sydney Brooks.

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UNITED STATES PATENT OFFICE.

ANDREW M. NELSON, OF ILLAWARA, LOUISIANA.

IMPROVEMENT IN DITCHING-MACHINES.

Specification forming part of Letters Patent No. **148,080**, dated March 3, 1874; application filed November 4, 1873.

To all whom it may concern:

Be it known that I, ANDREW M. NELSON, of Illawara, in the parish of Carroll and State of Louisiana, have invented certain new and useful Improvements in Ditchers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, making a part of this specification.

My ditcher is designed for building embankments, taking out cuts, digging ditches, and throwing up levees, or any other purpose for which such a machine can be used; and consists in a ditching-wheel or excavator, depending plows or cutters that loosen the earth upon either side, and a dirt remover or carrier that deposits the earth to one side of the ditch, together with the mechanism for operating these several devices. The invention consists more particularly in an improved construction and arrangement of the means for raising the dirt and depositing it upon the movable apron, by which it is carried and dumped upon the side of the bank, whereby the parts are made to work freely, and have sufficient elasticity to yield to large stones or other obstructions; also, in the device for raising the ditching-wheel from the ground when going to or from the intended scene of operation, and, when at work, of lowering the same, so as to take a cut of any desired depth, as hereinafter more fully described.

Figure 1 is a side elevation, and Fig. 2 is a plan view, of my entire machine. Fig. 3 is a partly sectional view through the line X of Fig. 2, showing the shape of the buckets.

My machine is intended to be drawn by from two to six horses or oxen, and, when in operation, it is driven along with the wheels resting upon either side of the proposed ditch, and the cutting-wheel is let down, and what it scoops up is elevated and dropped upon the carrier, by which it is conveyed to one side and deposited upon the embankment. This machine is supported upon four wheels, the principal weight being upon the two hind wheels A A, secured to an axle, *a*, which lies crosswise of the main frame B, and is held in position by bearings in the timbers *b b*. To these timbers are secured straps *c*, that move freely over the side pieces of frame B. To the axle *a* is secured a wheel, C, over which passes a band, D, which communicates motion, through a similar wheel, *d*, and shaft E, to the cutting-wheel. One side of this wheel is a circular disk, F, to which is secured the hub H. The other side of this wheel, I, is of the same outside diameter and about the same thickness, with a circular piece taken out of the center, of sufficient diameter to leave the metal from periphery to said opening about ten inches in width. To these two pieces are riveted the sides of the buckets or scoops *e*, the bottoms *f* of which are bent over and back, as clearly shown in Fig. 3 of the drawing. The earth is elevated and deposited by these buckets upon the apron or carrier J. This carrier receives motion from a band-wheel, K, over which, and a smaller one, L, passes the band *g*. The wheel L is secured near one end of shaft *h*, near the other end of which is secured a bevel-wheel, *i*, the teeth of which engage with those of pinion *j*, that is secured to roller-shaft *k*, by which the apron J is driven in the direction indicated by the arrow. The side pieces that support this carrier and the shaft E are secured to a frame, M, that moves freely up or down in guides formed in the uprights N, and the said frame may be raised or lowered by turning the screws *m*. The pieces O O connect axle *a* with shaft E, and when the frame M, which supports the said shaft, is raised or lowered, the said axle moves in a corresponding direction, which keeps the bands D and *g* always at the same tension. P is a thin piece of iron, bent to form a seat for the driver, and also to act as a guard to prevent the earth that may adhere to the buckets from dropping upon the same as the wheel revolves. The depending cutters Q loosen the earth and throw it toward the center from each side, when it may easily be scraped and carried up by the buckets *e*. *n* is a piece of metal of suitable length and thickness, upon the front side of which are marks indicating inches and feet. This said piece is secured to the movable frame M, and, as the same is lowered and the cutter-wheel goes down in the ditch, the depth is in-

dicated by the pointer. *o o'* is simply a guide to keep the same in an upright position.

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

1. The combination of the movable frame M with the carrier J, as herein shown and described.

2. A ditching-wheel consisting of the disks F and I, having buckets of the form shown, riveted or otherwise secured, as herein set forth.

3. The bar *n* and the pegs *o o'*, that keep it in an upright position, constructed and arranged substantially as and for the purpose herein set forth.

ANDREW M. NELSON.

Witnesses:

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