A. PETERSON.

DITCHING-MACHINE.

No. 186,160. Patented Jan. 9, 1877.

Fig. 1

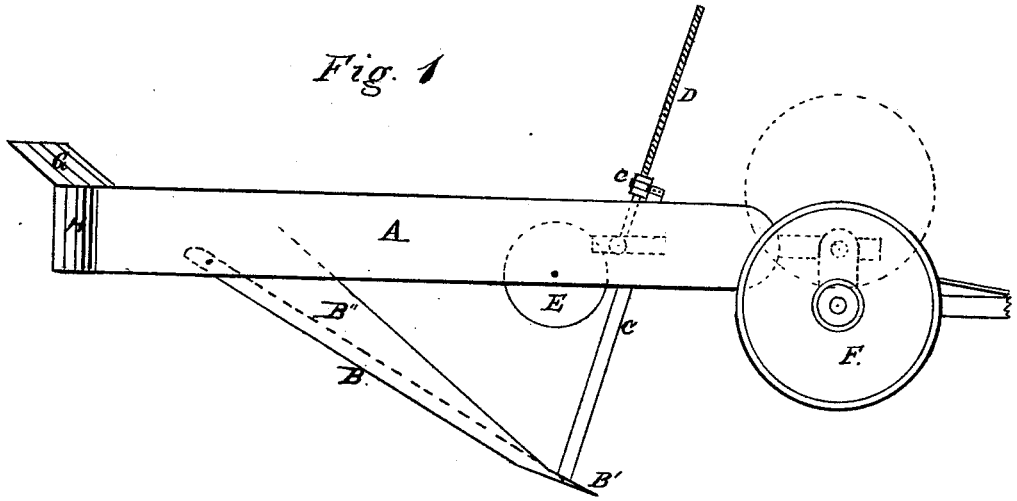
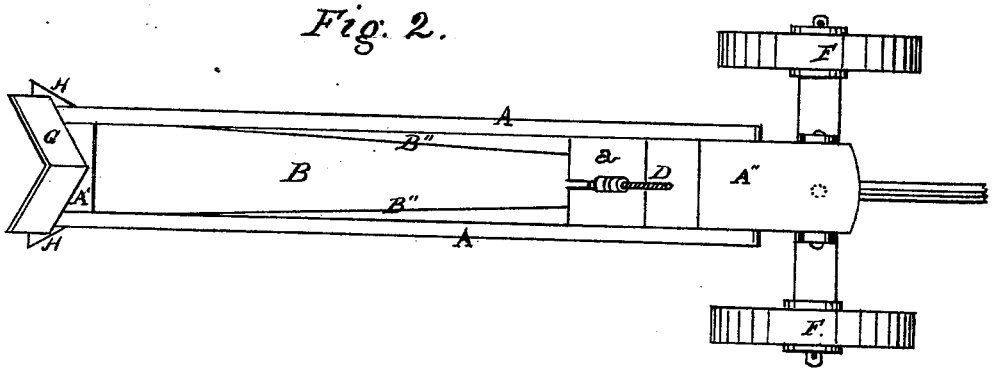


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALFRED PETERSON, OF LA FAYETTE, INDIANA.

IMPROVEMENT IN DITCHING-MACHINES.

Specification forming part of Letters Patent No. **186,160**, dated January 9, 1877; application filed June 30, 1876.

To all whom it may concern:

Be it known that I, ALFRED PETERSON, of La Fayette, in the county of Tippecanoe, State of Indiana, have invented a Ditching-Machine, of which the following is a specification:

This invention relates to that class of ditching-machines that are designed to cut and finish the ditch for the reception of tile, timber, gravel, &c., to the full depth required at one operation, such machines being usually operated by means of a capstan; and it consists in an adjustable inclined plane that is furnished with cutters on its lower end or point and on its sides, and that is pivoted by its upper end or heel in a frame-work that rests upon the ground in the operation of cutting the ditch, and to which the power is applied to draw the machine forward, the frame also being so constructed as to allow the soil to pass up between the side timbers, in which the inclined plane is hung, as it is shoved up the latter in the act of drawing the machine forward.

Figure 1 is a side elevation of a ditching-machine, embodying my invention, in which A is the frame-work; B, the inclined plane; C, a single vertical cutter-bar; D, the adjusting-screw; E, disk-cutters, attached to the inside of the side timbers of the frame, and F the trucks that serve the double purpose to level and steady the machine while in operation, and by which to conveniently transport it from place to place.

Fig. 2 is a top view of the machine.

The frame is made of two side pieces, A, separated from each other about the width of the ditch at the top or surface of the ground by pieces A′ A″, to which they are securely fastened by their front and rear ends. The inclined plane B tapers from point or bottom to heel or top, at such angle as will make the desired difference in width between the bottom and top of the ditch, and is made slightly narrower on the under or back side than the front or upper surface, and may be made of wood, covered with steel plate on its upper surface, or of iron and steel, furnished with a cutter, B′, at its lower end, and side cutters B″, commencing near the lower end and increasing in width to six or eight inches at the top, where it is pivoted in the frame A near its rear end.

It will be understood that the operation of the inclined plane B, furnished with the point cutter B′ and side cutters B″, is to scoop and carry up the earth as the machine is drawn forward, the side cutters serving the double purpose of guiding the earth in its ascent, and also smoothly trimming the sides of the ditch. The frame A is constructed, as described, so that the earth may pass up between the side pieces of the frame, which serves as runners or guides to regulate the depth of cut.

The vertical cutter-bar C is made of steel, and is pivoted by its lower end in a slot near the bottom end of inclined plane B, and is held in the center of the ditch by the guide *a*. The upper end of the cutter-bar is furnished with a collar and washer-nut, *c*, through which an adjusting-screw, D, passes, the lower end of the screw being pivoted in the guide-piece *a*. It is by means of this adjusting-screw that the inclined plane is raised or lowered to cut the ditch to any required depth, and also to raise the inclined plane entirely up clear of the ground when transporting the machine. A cant or saddle piece, G, is fixed to the top of the frame just in rear of the inclined plane B, by which the soil will be forced to the sides of the ditch. To scrape or drive it still farther away from the margins of the ditch, I also affix wings H to the side pieces of the frame, as shown. It is also contemplated to substitute a reversible plain piece for the saddle-piece G, so arranged that it may be adjusted to throw the soil wholly to either side. The trucks F are attached to the front end of the machine in a manner similar—that is, so as to be reversible—as shown in connection with the capstan in the Letters Patent No. 106,721, dated August 23, 1870, granted to me for improvements in mole-ditching machines. The difference in this case, however, being that when the trucks are turned under the machine they will elevate it so as to carry the lever end of the inclined plane B clear of the ground while transporting the machine; but when turned up, or on top of the frame A,

the periphery of the wheels will be on, or nearly so, with the bottom of the frame, so as to steady and hold the machine level.

The most striking peculiarity of my invention is in the form of, and manner in which, the inclined plane B is furnished with side cutters B″, by means of which the sides of the ditch are trimmed smooth, and in combination therewith the cutting-disks E that serve to cut the soil at the top. This, together with the vertical cutter-bar C, which serves to open the soil, as well as to regulate the depth of the ditch, renders the draft of the machine comparatively light. Also it will be seen that the ditch will be of the same width at top and bottom, whether it be deep or shallow.

I claim as my invention—

1. The adjustable inclined plane B, furnished with side cutters B″ that increase in width from point to heel, arranged and operating substantially as and for the purpose set forth.

2. The vertical cutter-bar C, having a collar, *c*, on its upper end, in combination with the hinged inclined plow B, the adjusting-screw D, pivoted in the guide-piece *a*, and the frame A, arranged to operate substantially as and for the purpose set forth.

3. In combination with the adjustable inclined plane B, with the side cutters B″ and the frame A, as described, the rotating disk-cutters E, arranged as and for the purpose set forth.

4. In combination with the frame A and adjustable inclined plane B the reversible trucks E, arranged and operating substantially as and for the purpose set forth.

ALFRED PETERSON.

Witnesses:
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