(No Model.)

S. E. WARRICK.

TILE DITCHING MACHINE.

No. 336,183. Patented Feb. 16, 1886.

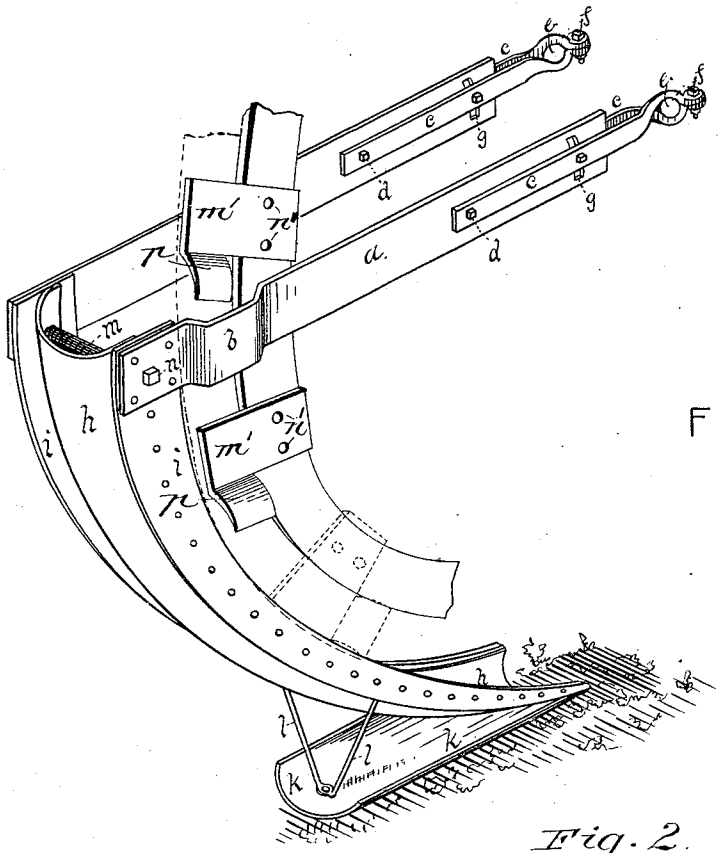


FIG. 1.

Fig. 2.

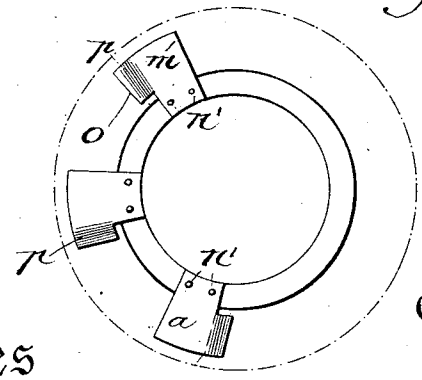


Fig. 3.



Witnesses

L. P. Graham

James L. Penniwell

Inventor.

Silas E. Warrick

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

SILAS E. WARRICK, OF MACON, ILLINOIS.

TILE-DITCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,183, dated February 16, 1886.

Application filed January 8, 1885. Serial No. 152,368. (No model.)

To all whom it may concern:

Be it known that I, SILAS E. WARRICK, a citizen of the United States, residing at Macon, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Tile-Ditching Machines, of which the following is a description.

My invention relates to a spout attached to tile-ditching machines. The object of the spout is to clean out the loose earth that falls in the ditch by the motion of the ditching-wheel. The spout is attached to the axle of the ditching-wheel, then extends back of and down behind and in the same circle as the wheel, and within about one foot of the lowest point of said ditching-wheel—that is, the spout slides on the bottom of the ditch, the point of the spout keeping about one foot behind a perpendicular line extending from the axle of the wheel to bottom of ditch. I attain this object by the mechanism illustrated in accompanying drawings, in which—

Figure 1 represents my invention entire. In Fig. 2 the circle-lines represent a side view of the ditching-wheel *m' m'*, the knives *n' n'*, the bolts that secure the knives to the ditching-wheel *o o*, the cutting-edge of the knives *p p*, a bend in the knives that sets the edge out from an even surface with the side of the ditching-wheel about three-fourths of an inch for the purpose of cutting the wall of the ditch wide enough to admit an iron shield for a covering for the cog-gearing that runs the ditching-wheel *e*, the outer surface of ditching-wheel *f*, bottom of ditch *g*. Fig. 3 is an end view of one of the knives.

a a represent draw-bars; *b*, a bend or deflection in draw-bar to permit passage of knives on rim of ditching-wheel. Other features are *c c*, draw-heads; *d d*, bolts; *e e*, openings for axle of ditching-wheel; *f f*, bolts clamping draw-heads to axle of ditching-wheel. *g g* are slots in draw-bars for the adjustment of lower end of spout to right position in bottom of ditch. *h h* is the back of the spout; *i i*, the side of the spout; *k k*, slide or shoe to the bottom of the spout; *l l*, braces; *m*, tubular brace, and *n* bolt passing through.

The improvement or attachment as constructed by me is described as follows: The material is iron. The draw-heads are one-half by two inch bar with a five-eighth bolt through the front end, then bent to fit the axle of ditching-wheel, and just behind the axle they are twisted one-fourth around, so as to fit side of draw-bars. They are then fastened to draw-bars by two five-eighth bolts, one at back end being stationary, the middle bolt passing through a slot in draw-bars, so as to admit of proper adjustment of the spout to bottom of ditch. The draw-bars are made of iron one-fourth inch by six inches, one of which is straight. The other is bent with an offset one inch out and six inches long, to admit of passage of knives on one side of the rim of the ditching-wheel. The sides of the spout are made of iron one-fourth by six inches, and cut to within one inch of a point at the lower end, then bent in a curve to suit the circle of the ditching-wheel. The back of spout is made of sheet-iron one-eighth inch thick, and of such width that when bent to correspond to outer rim of ditching-wheel, and when fastened to the sides of the spout, it will be as wide as the ditch. The back and sides are fastened together with rivets. The slide and shoe consists of a steel bar two feet long, made to correspond to the bottom of the ditch, and so adjusted as to slide along parallel to the bottom of the ditch. The object of said slide or shoe is to act as guide for lower end of spout, and it is sharp at front end. Two braces secure the back end of the shoe to the spout on either side and firmly support the same. The spout is fastened at the top to rear end of draw-bars by four one-half inch bolts at each side and one five-eighth bolt long enough to pass through the spout from one side to the other. There is also a three-fourths-inch iron tube long enough to fit in between the sides of the spout and rear end of draw-bars, used as a support.

The manner of using and operating the attachment or improvement as set forth in the above description is by having it fastened to the axle of the ditching-wheel, where it will keep the same position behind the ditching-wheel and in the bottom of the ditch, whether the surface of the ground is smooth or rough.

Practically a ditching-machine which does the excavating by means of a revolving wheel, with knives attached to the outer rim of the wheel and excavating from bottom upward,

leaves a large quantity of dirt which falls in either at the side of wheel or is carried over by it and partially refills the ditch. This leaves the ditch unfit for laying the tile, requiring the help of one or two men, whereas my invention saves that expense and leaves a much better bottom for the tile than can be made by hand.

I claim—

1. In a tile-ditching machine having an excavating-wheel, the combination, with a curved spout having a shoe, *k*, of draw-bars *a a*, having slots *g g*, for the purpose of adjusting the lower end of the curved spout to the proper position in the bottom of the ditch, and draw-heads *c c*, with openings *e e*, for the axle of the excavating-wheel to pass through, for the purpose of drawing the curved spout behind the excavating-wheel as the ditching-machine moves forward, substantially as has been described, and for the purpose specified.

2. In a tile-ditching machine having an excavating-wheel, the combination, with a curved spout, of draw-bars *a a*, one having a projection, *b*, said draw-bars secured to its upper end by means of bolts, and said draw-bars having draw-heads *c c* to reach the axle of the excavating-wheel, for the purpose of drawing said curved spout, all substantially as and for the purpose specified.

SILAS E. WARRICK.

Witnesses:

GEORGE W. WAITE,

DAVID P. KELLER.