(No Model.)

H. H. DIGGS.

POST HOLE BORING MACHINE.

No. 399,317. Patented Mar. 12, 1889.

Fig. 2.

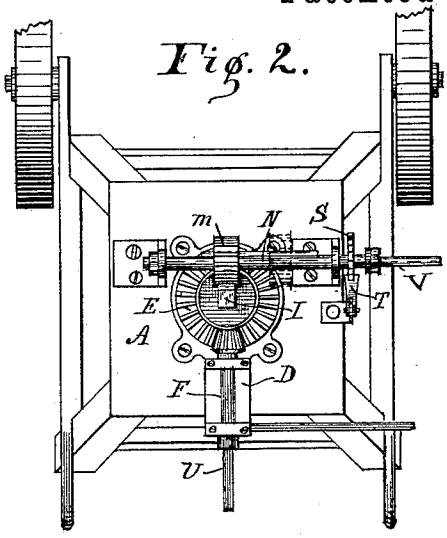


Fig. 1.

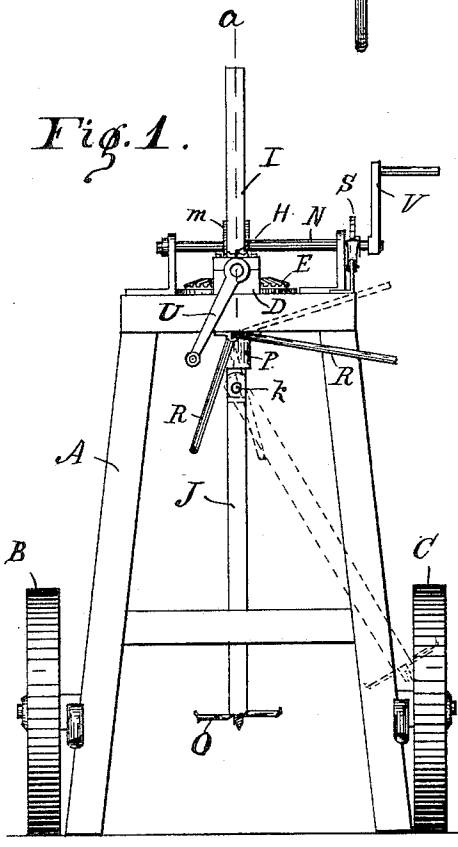
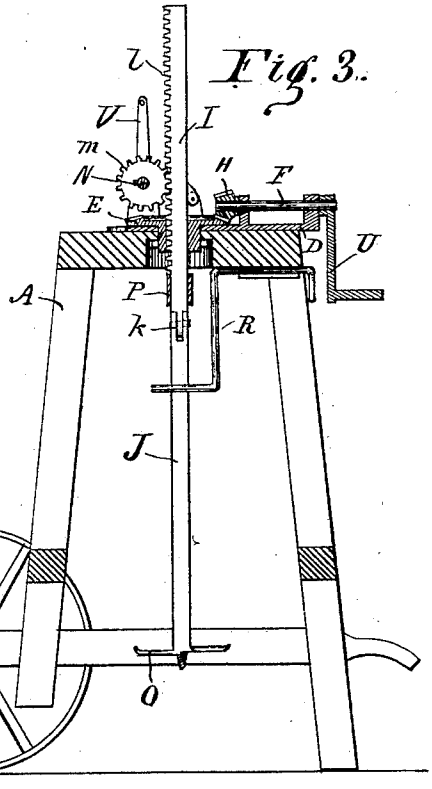


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

HARVEY H. DIGGS, OF FARMLAND, INDIANA.

POST-HOLE-BORING MACHINE.

SPECIFICATION forming part of Letters Patent No. 399,317, dated March 12, 1889.

Application filed October 10, 1888. Serial No. 287,720. (No model.)

To all whom it may concern:

Be it known that I, HARVEY H. DIGGS, a citizen of the United States, residing at Farmland, in the county of Randolph and State of Indiana, have invented a new and useful Improvement in Post-Hole-Boring Machines, of which the following is a specification.

My invention relates to an improvement in that class of machines for boring post-holes in which the auger-shaft forms a rack which slides vertically through a driving gear-wheel mounted in a suitable supporting-frame.

The objects of my improvement are to provide means for easily and quickly discharging the earth from the auger and means for holding the auger in position for discharging, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a front elevation; Fig. 2, a plan; and Fig. 3, a vertical section at *a*, Fig. 1.

A is a wooden frame, which is supported at its rear side on carrying-wheels B and C, and is provided at its front side with a pair of handles, whereby the machine may be conveniently moved. The mechanism for raising and lowering and for rotating the auger is mounted on the top of frame A.

D is a bed-plate, which forms at one end a bearing for the hub of a bevel gear-wheel, E, and is provided at the other end with bearings for the shaft F, which carries a pinion, H, which intermeshes with the gear-wheel E.

The auger-shaft consists of two sections, I and J, which are connected by a hinge-joint at *k*. The upper section, I, is rectangular and fits a correspondingly-shaped hole in the center of gear-wheel E, so as to slide easily therein.

One side of section I of the auger shaft is provided with cog-teeth *l*, which intermesh with a pinion, *m*, which is mounted on a shaft, N, so as to turn therewith, and to also slide longitudinally thereon. The auger O is secured to the lower end of section J of the auger-shaft. For the purpose of holding the two sections of the auger-shaft in line when boring, a sleeve, P, is fitted to slide over and embrace the joint *k*. For the purpose of swinging the lower section of the auger-shaft out of line with the upper section, and thus tilting the auger, as shown in dotted lines, Fig. 1, so as to discharge the earth therefrom when raised, I mount a bent lever, R, on frame A in such a position that one end of the lever will engage the auger-shaft, while the other end projects along the front of the frame within convenient reach of the operator.

S is a ratchet-wheel secured to shaft N.

T is a pawl mounted on the frame and arranged to engage ratchet-wheel S.

Shafts F and N are turned by means of cranks U and V.

The operation of my device is as follows: Sleeve P being slipped over the joint *k* of the auger-shaft, pinion *m* is moved along shaft N out of engagement with the auger-shaft, as shown in dotted lines, Fig. 2, the auger falls, and, being rotated by means of shaft F, pinion H, and gear-wheel E, the hole is bored until the auger becomes clogged with the loosened earth. To raise and clear the auger, the auger-shaft is turned until the teeth *l* on section I are presented toward shaft N and stand parallel therewith. Pinion *m* is then slipped along shaft N and into engagement with the teeth *l* on the auger-shaft. Shaft N is turned by means of crank V, thus raising the auger and earth thereon out of the hole until the joint *k* in the auger-shaft is above the point where lever R engages the shaft. Shaft N is prevented from turning backward by the ratchet-wheel S and pawl T, thus sustaining the auger and its shaft, and also preventing the auger-shaft from turning. Sleeve P is now raised, so as to release joint *k*, and the operator, either by seizing the section J of the auger-shaft or by means of lever R, swings it to one side, thus tilting the auger and dumping the earth thereon at one side of the hole.

I am aware it is not new to make the auger-shaft in two sections, nor to provide means for rotating and raising the auger-shaft, and do not claim such mechanism, broadly.

I claim as my invention—

In a machine for boring post-holes, the frame, the gear-wheel mounted on said frame and having an angular central opening, the auger, the auger-shaft formed of two sections hinged together, one of which sections fits said

opening in the gear-wheel, so as to slide longitudinally therein and rotate therewith, the cog-teeth in one side of said section, the pinion arranged to intermesh with said cog-teeth, the shaft arranged to rotate and to form a sliding support for said pinion, and the bent lever mounted on the frame and arranged to engage the lower section of the auger-shaft, all combined and arranged to co-operate substantially as specified.

HARVEY H. DIGGS.

Witnesses:
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