

W. B. BEAGLE.
POST HOLE AUGER.

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POST-HOLE AUGER.

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To all whom it may concern:

Be it known that I, WILLIAM B. BEAGLE, a citizen of the United States, residing at Paris, in the county of Monroe and State of Missouri, have invented new and useful Improvements in Post-Hole Augers, of which the following is a specification.

The object of my invention is to provide a simple and easily-operated machine for boring or excavating post-holes and lifting the cut or loosened earth and setting it aside.

My invention consists in a post-hole-boring machine in which the several parts are constructed and arranged as hereinafter more fully described, and specifically pointed out in the claims.

In the annexed drawings, illustrating my invention, Figure 1 is a side elevation of a post-hole-boring machine embodying my improvements and showing the auger-casing raised. Fig. 2 is a view of the opposite side of the machine, showing the auger-bit lowered. Fig. 3 is a view of the auger-bit detached from the auger-bar. Fig. 4 is a sectional detail view of the auger bar and bit. Fig. 5 is a detached view of one of the two horizontal cogged wheels that form part of the gearing for driving the auger-bar. Fig. 6 is a perspective detail of an adjustable gear-coupling.

Referring to the drawings, the letter A designates an upright or standard, which may be made of gas-pipe, having its lower end screw-threaded or otherwise fitted into a coupling or socket B, secured to a platform C by means of small bolts *d d* or other fastenings.

The platform C is provided on one lateral edge with an approximately-circular opening E, through which the auger-bar F and attached auger-bit G can pass, and which will enable them to be turned to one side when raised. A brace W is secured at its lower end to the platform C by means of bolts *h h*, and at its upper end is provided with a collar R, that surrounds the upper portion of the standard A, and may be secured thereto by means of a thumb-screw I.

On the standard A, above the collar R, is a loose sleeve J, which can be rotated on said standard, when required, to turn the auger aside, or be secured rigidly by means of a

thumb catch or lock M while the auger is in operation. This sleeve J is provided with two laterally-projecting arms or extensions *n n*, having openings in or near their outer ends to permit the passage of the auger-bar.

The upper portion of the auger-bar is provided with a screw-thread corresponding in pitch with a screw-thread formed in the opening in the end of the lower arm or extension *n*, and said auger-bar is also provided with a longitudinal key-seat *f*, which extends the entire length of the screw-threaded portion of said bar.

The auger-bar F is operated by means of a crank T, cog-wheels *s s s s*, two of which are horizontal and two vertical, and an adjustable coupling V, which is provided with a small key *u*, that engages the key-seat *f*, formed in the auger-bar. This coupling V is also provided with a thumb-bolt H, that can be moved up or down to engage the coupling with either the upper or lower horizontal cog-wheel, the bolt being thereby engaged with an opening *t* in either one of said wheels, as the case may be. The upper horizontal cog-wheel meshes with the smaller vertical cog wheel or pinion, and the lower horizontal cog-wheel meshes with the large vertical cog-wheel. It will thus be seen that by changing the position of the bolt H, attached to the coupling V, the auger-bar F, engaged therewith, can be operated more or less rapidly, as required, without changing the motion of the crank. While the auger-bar is thus rotated it is fed downward or upward, according to the direction in which the crank is turned, by reason of its screw-threads taking into the screw-threaded opening in one of the arms *n*.

The auger-bit G is locked while boring by means of a steel key *k*, near the lower end of the auger-bar, coming in contact with a shoulder *g* on the auger-bit. By reversing the motion of the crank and auger-bar the auger-bit is automatically unlocked while lifting the dirt out of the excavation, the auger-bar F being revolved in the auger-bit G, while the latter ceases to revolve. Beneath the auger-bit G are two lips or root-cutters of any suitable construction.

Surrounding the lower portion of the auger-bar is a casing, which is closed at the top and provided with a lever P, by which it can be

raised and lowered. By lowering this casing O over and around the auger-bit the top or soil dirt is prevented from falling back into the hole while being removed. When the
 5 auger-bit has been lifted and turned aside, by loosening the catch M and turning the sleeve J the casing O can be raised by means of its lever P, and the dirt be removed from the auger-bit either by a quick or sudden motion
 10 of the crank T or by means of the foot, or otherwise.

The auger-bar F may be hollow or tubular throughout its length or only in its lower half for the admission of air to prevent suction,
 15 three small air-holes *a* being provided near the spur end of the auger-bar, over which air-holes a washer or collar *b* is placed to prevent the holes from filling up with dirt. This washer may be held in place by means of a
 20 key *c* or otherwise. If the auger-bar F is hollow for only a portion of its length, another air-hole *e* may be provided at the upper end of the hollow portion or near the lower end of the screw-thread formed on said bar.

25 The operation of the machine will be readily understood without further explanation.

What I claim as my invention is—

1. In a machine for boring post-holes, the combination, with a standard, and a rotatable
 30 sleeve mounted thereon and having lateral arms *n n*, one of which is provided with a screw-threaded opening, of an auger-bar mounted in said arms and having its upper portion externally screw-threaded and provided with a longitudinal key-seat, two horizontal cog-wheels loosely mounted on the auger-bar, two vertical cog-wheels or gears meshing with the horizontal cog-wheels and provided with a crank, a coupling engaged with
 35 the key-seat in the auger-bar and adapted to

engage either of the horizontal cog-wheels, and an auger-bit on the lower end of the auger-bar, substantially as described.

2. In a machine for boring post-holes, the combination, with a hollow auger-bar having
 45 a number of air-openings near its lower end, of a washer or collar surrounding said openings, and a key to hold said collar in place, substantially as described.

3. In a machine for boring post-holes, the
 50 combination, with the auger-bar and auger-bit, of a vertically-movable casing having a closed top and surrounding the lower portion of the auger-bar, and a lever for raising and lowering said casing, substantially as described.
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4. In a machine for boring post-holes, the combination of the standard A, the rotatable sleeve J, mounted on said standard and provided with a lock M and lateral arms *n n*,
 60 the auger-bar F, having a longitudinal key-seat *f* and externally screw-threaded to engage screw-threads in one of the arms *n*, the cog-wheels *s s s*, crank T, the coupling V, engaged with the key-seat *f*, the bolt H, to engage
 65 said coupling with one of the horizontal cog-wheels, and the auger-bit G on the lower part of the auger-bar, substantially as described.

5. In a machine for boring post-holes, the
 70 combination of the standard A, the platform C, having an opening E, the rotatable sleeve J, having arms *n n*, the auger-bar F, bit G, and the vertically-movable casing O, substantially as described.

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Witnesses:

W. R. BASKETT,
 T. B. BROUGHTON.