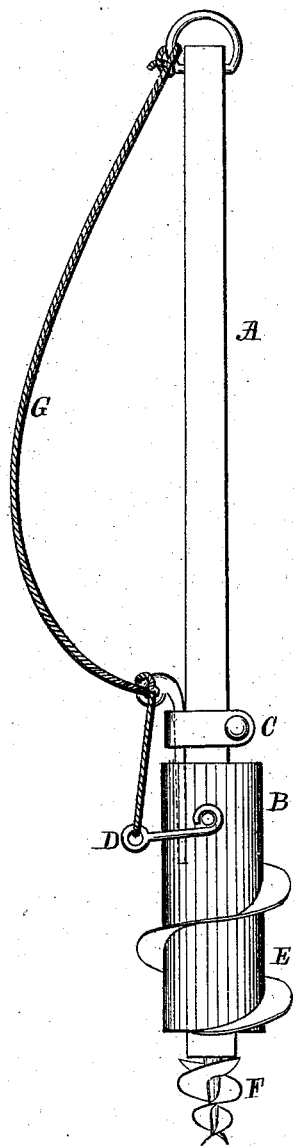


I. HOOVER.
EARTH-AUGER.

No. 187,759.

Patented Feb. 27, 1877.



Witnesses:

J. J. Felice
Boston Pickering.

Inventor:

Isaac Hoover

UNITED STATES PATENT OFFICE.

ISAAC HOOVER, OF WEBSTER, OHIO.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **187,759**, dated February 27, 1877; application filed January 8, 1877.

To all whom it may concern:

Be it known that I, ISAAC HOOVER, of Webster, Darke county, State of Ohio, have invented Improvements in Earth-Augers, of which the following is a specification:

My invention relates to augers designed for boring wells, and pertains to a device for sustaining a fixed relation of the enlarging auger to the shaft during the operation of boring.

The figure represents a side elevation of the auger.

A represents a square shaft of suitable length, the top being supported by a derrick, in the usual manner, and at a suitable point is secured a draft-bar, to which horse-power is applied to operate the auger. At the lower end is attached a screw-point, F, to penetrate the earth as the shaft is rotated. The sleeve B is cylindrical, and has a square orifice through its center, and it passes freely over the shaft. About this sleeve is secured the spiral plate E, and the lower end of which terminates in a cutter. Near the upper end is attached the bail D, which is supported on pins on either side. At the center of this bail is an eye, to which the chain G is attached. C is a key, which enters the orifice of the sleeve, and tightens the sleeve to the shaft. At the top it has two arms, extending on either side of the shaft, and these being connected by a bolt, the shaft is inclosed, and thus the shaft serves as its guide. A part extends upward and outward, and has an eye for the attachment of the chain. The chain

G is fastened to the bail, and then to the key, and its upper end is supported on the shaft during the process of boring. The chain is so fastened that the weight of the bail is added to the key to seat the same. The sleeve B, with the spiral E, constitutes the enlarging-auger. As the shaft is turned the screw-point enters the earth, while the enlarging-auger carries up the earth along its spiral, and when sufficiently loaded, the chain is passed over a pulley, and thereby raised to the top of the ground for discharge.

The operation of the key is to bind the enlarging-auger to the shaft, and thus preserve a fixed relation of the two parts.

In the process of raising the enlarging-auger the tension on the chain first raises the key from its seat, and thereby permitting a free movement of this auger along the shaft.

In boring in the earth and coming on a stratum of sand, the shaft would rapidly advance and leave the enlarging-auger behind, and to prevent this is the purpose of the key. The gravity of the wedge-shaped key, the bail and the end of the chain are sufficient to bind the enlarging-auger to the shaft.

What I claim as my invention is—

The key C, in combination with the enlarging-auger B, bail D, shaft A, and chain G, substantially as set forth.

ISAAC HOOVER.

Witnesses:

J. J. BELVILLE,
BARTON PICKERING.