

G. G. COLLINS & J. A. MORRISON.

Earth-Augers.

No. 134,734.

Patented Jan. 14, 1873.

Fig. 1.

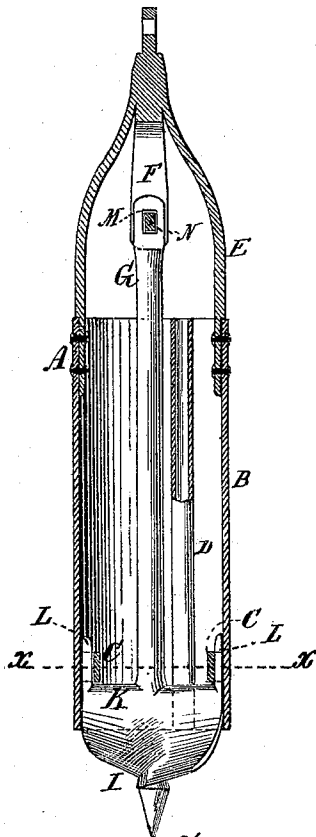


Fig. 2.

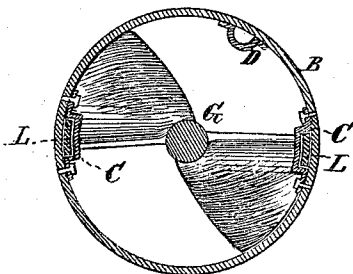


Fig. 4.

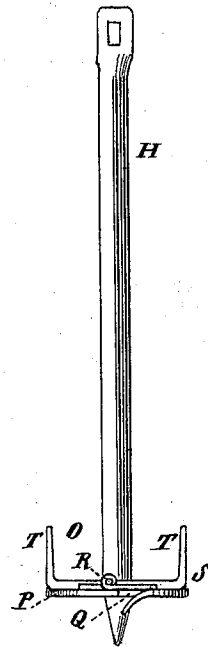


Fig. 5.

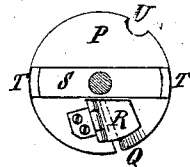
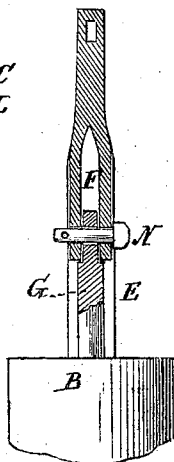


Fig. 3.



Witnesses.
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Inventors.
George G. Collins
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By their attys
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UNITED STATES PATENT OFFICE.

GEORGE G. COLLINS AND JAMES A. MORRISON, OF PHILO, ILLINOIS, ASSIGNORS OF ONE-THIRD OF THEIR RIGHT TO OLIVER WOOD, OF SAME PLACE.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. 134,734, dated January 14, 1873.

To all whom it may concern:

Be it known that we, GEORGE G. COLLINS and JAMES A. MORRISON, of Philo, in the county of Champaign and State of Illinois, have invented new and useful Improvements in Augers for Boring Wells, &c., of which the following is a specification, reference being had to the accompanying drawing.

Nature and Objects of the Invention.

This invention relates to certain improvements in augers for boring wells, &c.; and consists, first, of a bit-stock composed of a hollow metallic cylinder provided with loops on opposite interior sides near the bottom, an air-passage extending its full length on the inside, and a bifurcated brace secured to the top of the metallic cylinder and provided with a socket and key-hole for the reception of a bit-shaft, for the purpose of holding bits for boring wells; secondly, in combining with the bit-stock, composed as above described, an auger-bit, the upper edges of the blade of which are provided with vertical flanges; and, thirdly, in combining with the bit-stock, composed as above described, a bit composed of a slotted circular plate of the same circumference as the metallic cylinder in the bit-stock, having one edge of the slot bent downward to form the cutting-edge of the bit, and the entire slot covered by a hinged flap, said plate being secured to a fixed and vertically-flanged cross-piece through which the point of the bit-shaft passes, for the purpose of removing the quick-sand when boring wells, &c., in the ground.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of the bit-stock and a perspective view of the auger-bit; Fig. 2 is a cross-section of Fig 1 through the line *x x*; Fig. 3 is a partial sectional view of the bit-stock at right angles to Fig. 1; Fig. 4 is a view in perspective of the sand-bit; and Fig. 5 is a plan view of Fig. 4, showing the bit-shaft in section.

General Description.

A is the bit-stock, composed of the hollow metallic cylinder B, provided with the loops

C C on interior opposite sides, near the bottom. D is an air-passage extending the full length of the cylinder B. E is the bifurcated brace, securely riveted to the sides of the cylinder B. F is the socket and key-hole to which the bit-shafts G or H are keyed. I is the auger-bit, the upper edges of the blade K being provided with flanges L L, which enter the loops C C when the bit I is placed in the bit-stock. The shaft G of the bit I has the key-hole M, and is secured to the socket F by a key, N. O is a bit used for removing quicksand, and it is composed of a circular plate, P, of the same circumference as the metallic cylinder B, provided with a slot, Q, one edge of which is bent downward to form the cutting-edge of the bit O. The slot Q is closed by a hinged flap, R, and the plate P is secured to the fixed cross-piece S, provided with vertical flanges T T, which enter the loops C C when the bit O is in use. The bit-shaft H is secured in the bit-stock A in the same manner as the shaft G. The circular plate P closes the end of the cylinder B with the exception of the air-passage D, a small opening, U, being left at this point in the plate P.

When the auger-bit I is in use the cutting-edges of the bit cut the ground and at the same time cause the whole device to penetrate gradually deeper therein. When the cylinder becomes filled with the loosened earth the device should be withdrawn, and the bit I taken from the bit-stock A in order to empty the earth from the cylinder.

When it is desired to remove quicksand the bit O is used and the quicksand is forced into the cylinder B through the slot Q, until the cylinder is filled, when it should be withdrawn. The weight of the quicksand closes the hinged flap R over the slot Q and prevents the escape of the quicksand. The bit O should be removed from the bit-stock in order to empty the quicksand from the cylinder.

Claims.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. The bit-stock A, composed of the hollow cylinder B provided with the loops C upon its interior opposite sides so as to permit of the

insertion of the auger-bits I and O, at pleasure, substantially as shown and described.

2. The bit-stock A, composed of the metallic cylinder B provided with loops C C, air-passage D, and bifurcated brace E, and socket and key-hole F, arranged relatively one to the other, as and for the purposes hereinbefore set forth.

In testimony that we claim the foregoing in-

vention of improvements in augers for boring wells, &c., as above described, we have hereunto set our hands and seals this 2d. day of April, 1872.

GEORGE G. COLLINS. [L. S.]

JAMES A. MORRISON. [L. S.]

Witnesses:

JAMES P. LEASURE,

ORSON TURNER.