W. H. YARBOROUGH.

Earth-Auger.

No. 197,445. Patented Nov. 20, 1877.

Fig. 1.

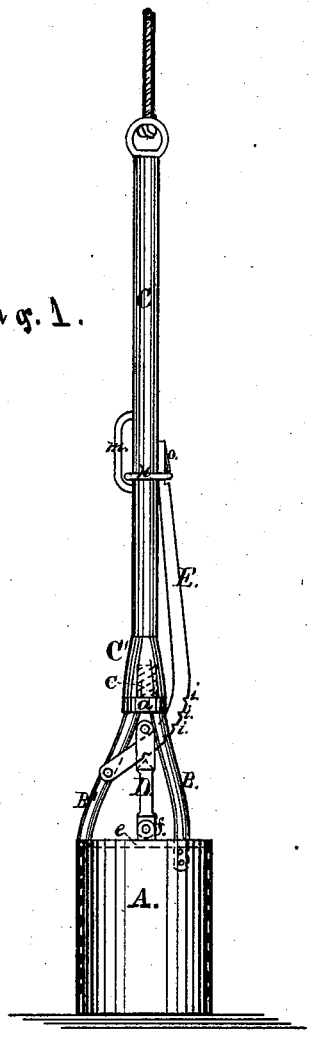
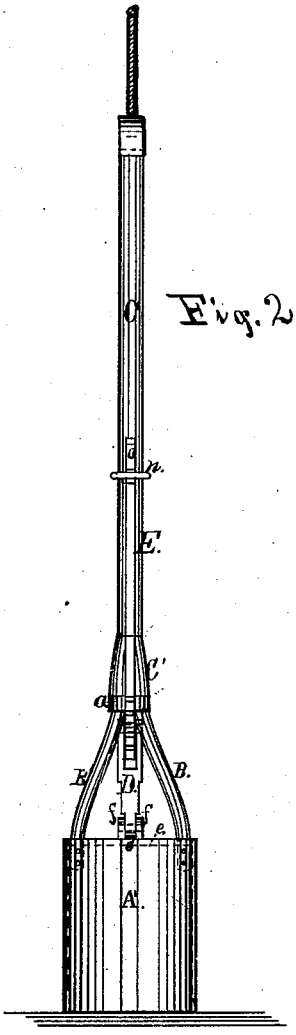


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. YARBOROUGH, OF SHERMAN, TEXAS.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **197,445**, dated November 20, 1877; application filed July 6, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. YARBOROUGH, of Sherman, in the county of Grayson and State of Texas, have invented a new and valuable Improvement in Earth-Augers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side elevation of my invention, and Fig. 2 a front view of the same.

My invention relates to means for boring and excavating wells; and it consists in the combination and arrangement of devices, all as hereinafter fully described.

The letter A of the drawings designates the bucket, which is simply a vertical cylinder made of a single piece of iron or steel, the vertical edges of which are not abutted against each other, but left a slight distance apart, as shown at A′. This cylinder determines the size of the well and maximum capacity of the apparatus, and is designed to measure, say, twenty-four inches across its periphery and one foot in diameter, with the bottom edge ground sharp and slightly curved outward all around. To the top of this cylinder, at equal distances apart, are riveted or otherwise secured three curved arms, B B B′, that project upward and inward, terminating at the top in a shoulder, *a*, and male screw *c*. C represents the stem to which this auger is attached. It consists of a rod of iron, six or seven feet in length, enlarged at the bottom end C′, and provided with a female screw to correspond with male screw *c*. When attached to the auger, this enlarged part and shoulder *a* should be jammed together, thus relieving the threads of the screws from all jar.

The auger, when in operation, is raised and let fall upon the earth, by means of a rope actuated by suitable mechanism attached to the top part of stem C, until filled, when the auger and stem are drawn from the well and the earth removed by the apparatus, which I will now proceed to describe.

e is a plunger loosely fitting the inside of cylinder A. Near its center are two projections or lugs, *f f*, to which is pivoted the rod D. The upper end of this rod is forked, and between the forks it is Λ-shaped, corresponding with notches *i* in the curved lever E. The foot of this lever is pivoted to the arm B′, as shown in Fig. 1. In the stem C is a staple, *m*, holding a ring, *n*. This ring passes around the stem, and, when the auger is in the well, is slipped over the top of lever E, and retained there by a spring-catch, *o*, thus holding the lever parallel, or nearly so, with the stem C. When the earth is to be removed, the upper end of this lever is freed from the ring and drawn over to one side, forcing the plunger *e* and contents of the cylinder downward.

It has been found in practice that it is only necessary to force the earth about one-half the length of the cylinder, when it will drop out of its own gravity.

As the plunger is forced down, the Λ in rod D is moved by hand from notch to notch in the lever until the earth drops out, when the lever is again raised up and secured by the ring, when the auger is again lowered into the well, and the operation repeated.

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

The combination, with the cylindrical cutter A, arms B B′, and stem C, of the forked arm D, plunger *e*, notched lever E, and ring *n*, the several parts constructed and arranged substantially as herein shown and described.

WM. H. YARBOROUGH.

Witnesses:

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