

S. EMERY.
Earth-Augers.

No. 142,218.

Patented August 26, 1873.

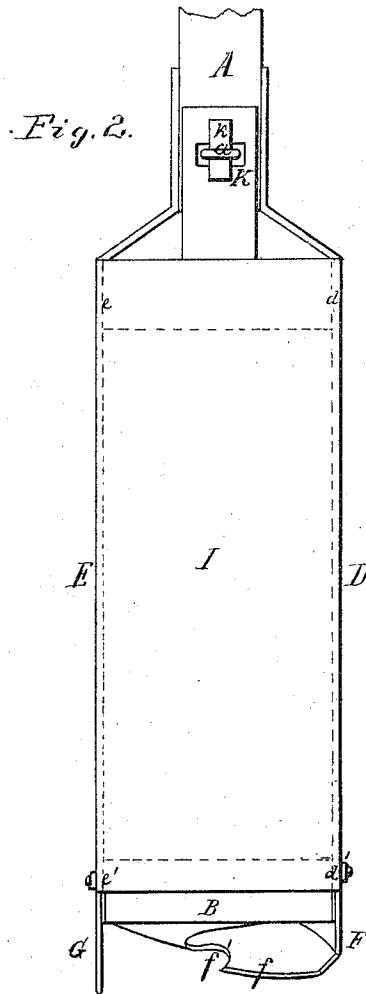
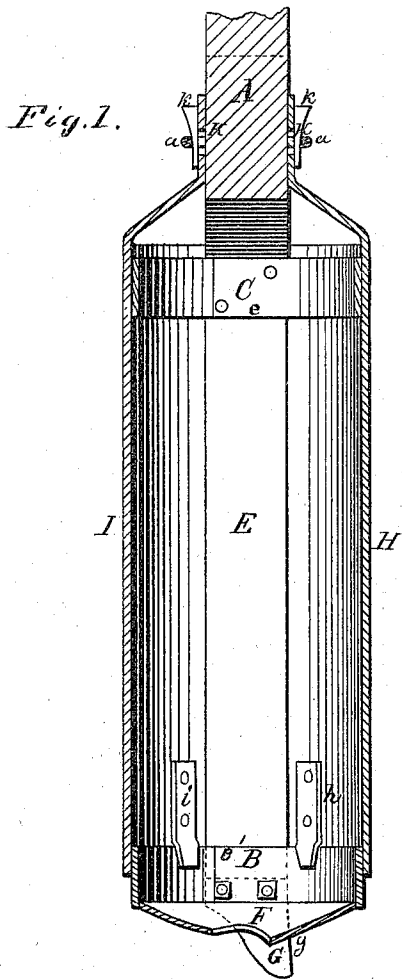
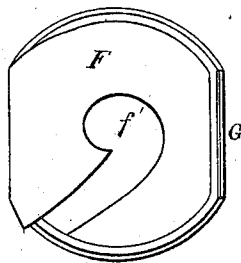


Fig. 3.



Witnesses.
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Atty

UNITED STATES PATENT OFFICE.

STEPHEN EMERY, OF CAMERON, MISSOURI.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **142,218**, dated August 26, 1873; application filed May 3, 1873.

To all whom it may concern:

Be it known that I, STEPHEN EMERY, of Cameron, in the county of Clinton and State of Missouri, 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 a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of my improved earth-auger by longitudinal section. Fig. 2 is a side view of the same. Fig. 3 is a bottom view of the same.

My invention relates to an improved construction of an earth-auger, which facilitates the discharging of its contents and the exchanging of its cutters or bits, which insures easy ventilation, and which makes my auger a very cheap article of manufacture in comparison with augers of different construction. — A represents a boring-bar, of square shape, by preference. To the end of it is bolted the skeleton frame of my auger. It consists of two metal rings, B C, and two upright flat plates, D E, which are fastened to the bar A. The rings B C have two flat or straight surfaces, *e d* and *e' d'*, diagonally opposite each other, to which the flat plates D and E are fastened. To the lower ring B the bits F and G are fastened with bolts and screws, or in any other mode which permits their removal and reattachments within a short space of time. The cutter G, which has a perpendicular cutting-edge, *g*, prepares the round surface of the hole or well. The scraper or lifter F forms the bottom of the auger, and has a spirally-inclined surface with a cutting-edge, *f*, at the lower end, and a hole, *f'*, in the center. This hole serves two purposes, the first of which is, that the bits F and G are guided only by the outside surface of the auger, and thereby secure a good fit of the same in the

hole, which is the principal requisite for boring a straight hole. The other purpose served is this, that the amount of earth lifted is smaller and there is a core left, of the diameter of the hole, which, by friction, assists the elevation of the lifted or scraped earth along the spiral surface of the bit F, and breaks as soon as the friction mentioned overcomes its weight. The spaces between the plates D and E are covered by cylindrical sheets H and I, which form the cylindrical part of the auger, and which are fastened to the lower ring B by hasps *h* and *i*, and are attached to the bar A by means of a wedge, *k*, an eye-hook, *a*, on the bar A, and a slot, K, in either of the said sheets. The sheets H and I are easily removed by withdrawing the wedges *k k*. The interruption of the cylindrical surface of the auger by the two parallel surfaces of the plates D and E causes two segmental spaces between the auger and the earth around the well-hole, which serve to lessen the friction of the auger when at work, and which serve as ventilators by preventing a vacuum under the auger when it is hoisted.

What I claim as new, and desire to secure by Letters Patent, is—

1. The plates D and E and rings B and C, constituting the frame of an auger, substantially as specified.

2. The auger-bit F with cutting-edge *f* and hole *f'*, and cutter G, with vertical edge *g*, arranged substantially as specified.

3. The sheets H I, hasps *h i*, slots K K, wedges *k k*, eye-hooks *a a*, and bar A, combined and arranged substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

STEPHEN EMERY.

Witnesses:

SARAH E. HOWARD,
W. EUGENE HOWARD.