D. G. FIELDS.
Earth-Augers.

No. 196,649. Patented Oct. 30, 1877.

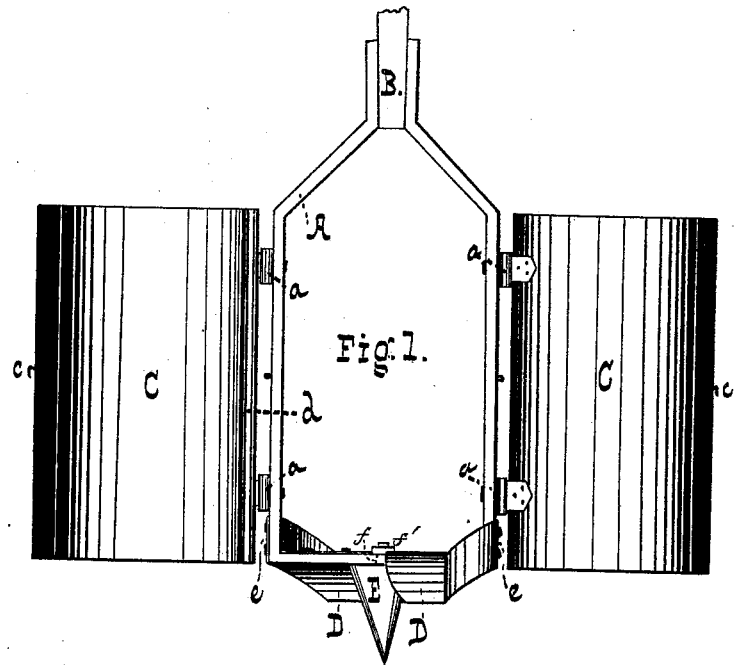


Fig. 1.

Fig. 2.

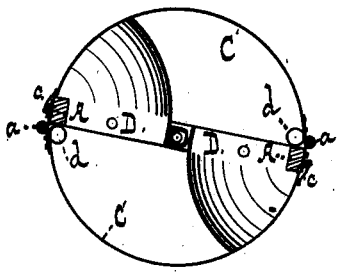


Fig. 3.

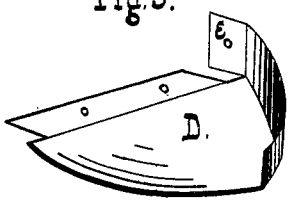
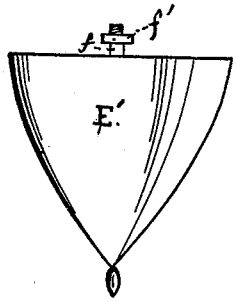


Fig. 4.



Attest.
W. A. Bertram.
F. A. Soper.

Inventor
D. G. Fields
per Attorney
R. D. Williams.

UNITED STATES PATENT OFFICE.

DANIEL G. FIELDS, OF HARRISVILLE, TEXAS, ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO JOSEPH WHITE, TAYLOR WHITE, AND MARCUS A. HUNTER, OF SAME PLACE.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **196,649**, dated October 30, 1877; application filed August 3, 1877.

To all whom it may concern:

Be it known that I, DANIEL G. FIELDS, of Harrisville, Bell county, State of Texas, have invented certain new and useful Improvements in Earth-Augers; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of my auger opened; Fig. 2, a horizontal sectional view of the same closed; Fig. 3, a perspective view of one of the cutters; and Fig. 4, a similar view of the rock-drill.

This invention relates, as stated, to earth or well augers; and it consists in certain details of construction and combinations of parts, as hereinafter fully set forth and claimed.

In the accompanying drawings, A represents the frame of the auger, to which are attached the shaft B, doors C C, cutters D D, and bits E E′. Between the upper ends of the frame A the shaft B is inserted, and is securely fastened in place by means of bolts or other suitable appliances. Strong hinges *a a* are riveted or bolted to the frame, as shown, and are similarly attached to the doors C. These latter are constructed of strong sheet metal, and bear a suitable catch or fastener, *c*, near the unattached edge. The opposite sides of the doors are turned or folded over to form the air-tubes *d d*, as shown in Fig. 2. At the bottom of the frame are bolted the cutters D D, whose edges are bent at right angles to the plane of the cutters at the point of junction, in order to form a continuation of the doors C, and direct the loosened dirt into the body of the auger. The peculiar shape of these cutters is best illustrated in Fig. 4 of the drawings, the vertical side of the cutter being formed into a tang, *e*, for attachment to the side of the frame, the body of the cutter being similarly fastened to the bottom of the same.

By these means the cutters are braced in planes at right angles, insuring the maximum of stability.

The bit E is furnished with a square or rectangular shoulder, *f*, which passes through a similarly-shaped aperture in the bottom of the frame. The shank of the bit above the shoulder is rounded and threaded, for attachment to the frame, by means of a nut, *f′*.

E′ represents the rock-drill, which is similarly constructed as far as the means of attachment are concerned, but differs in the construction of the cutting point and edges, the former being twisted, as shown.

When operating the auger in rocky soils, the rock-drill is substituted for the ordinary bit.

The air-ducts *d d* furnish a ready means of access for the air to the pit when the auger is being withdrawn, and by their construction all danger of clogging or becoming stopped up is obviated.

I am aware that it is not new to fold one edge of the shell of an earth-auger to form an air-tube, and such, therefore, I do not claim broadly; but,

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

1. In an earth-auger, a hinged door having its edge folded or bent to form an air-tube, substantially as described.

2. In an earth-auger, a pair of hemi-cylindrical doors having on one or both an air duct or ducts, substantially as described.

3. The auger herein described, consisting of the frame A, doors C, having air-ducts *d*, cutters D, and bit F, all combined and arranged as set forth.

4. In combination with the earth-auger, the interchangeable bits E E′, having shouldered and threaded shank *f*, and the nut *f′*, as shown and described.

Witness my hand this 26th day of July, 1877.

DANIEL G. FIELDS.

Witnesses:

SAMUEL SILVERS,

J. B. NUNNELEY.