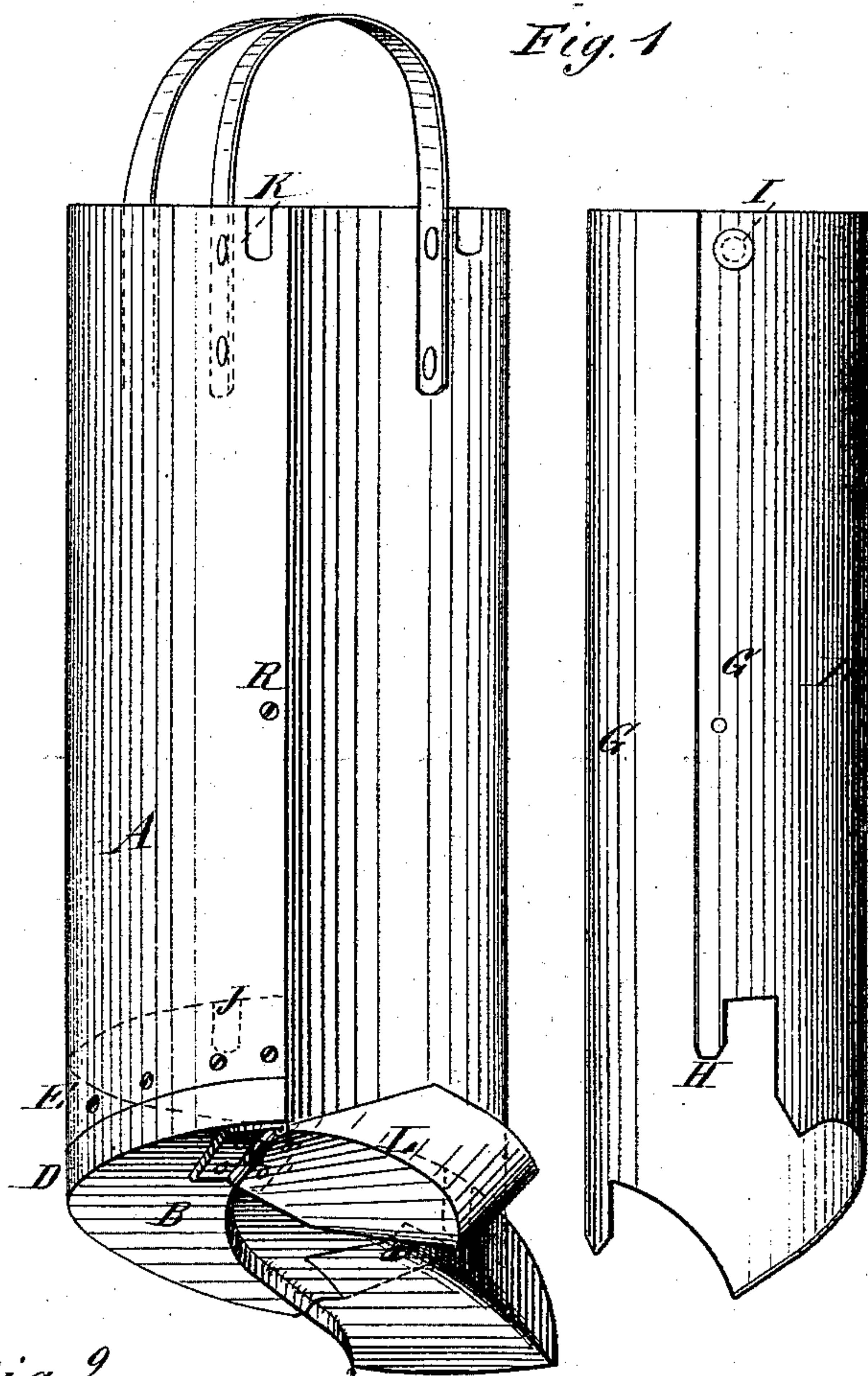


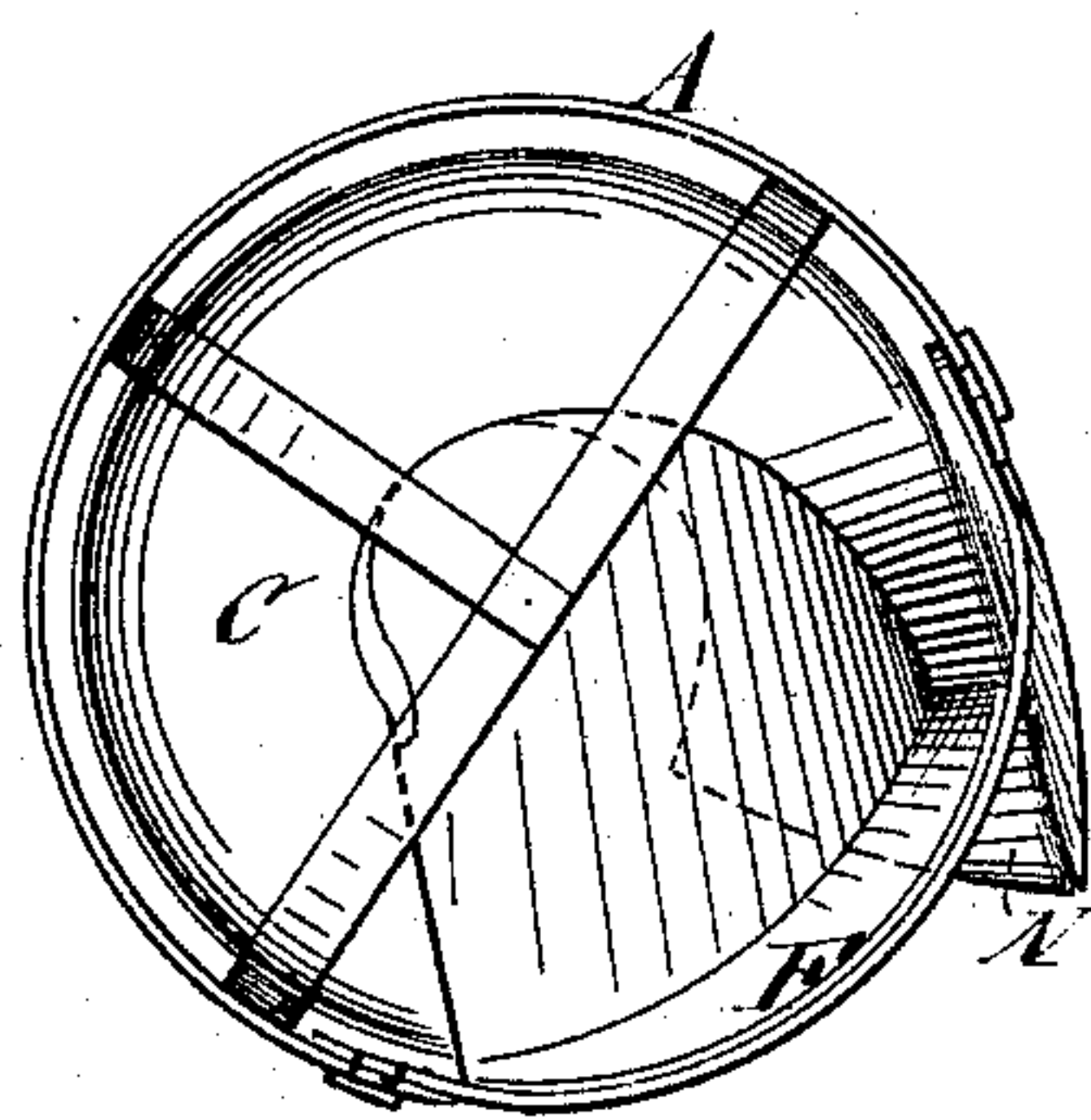
J. E. HALL.  
Earth-Augers.

No. 165,998.

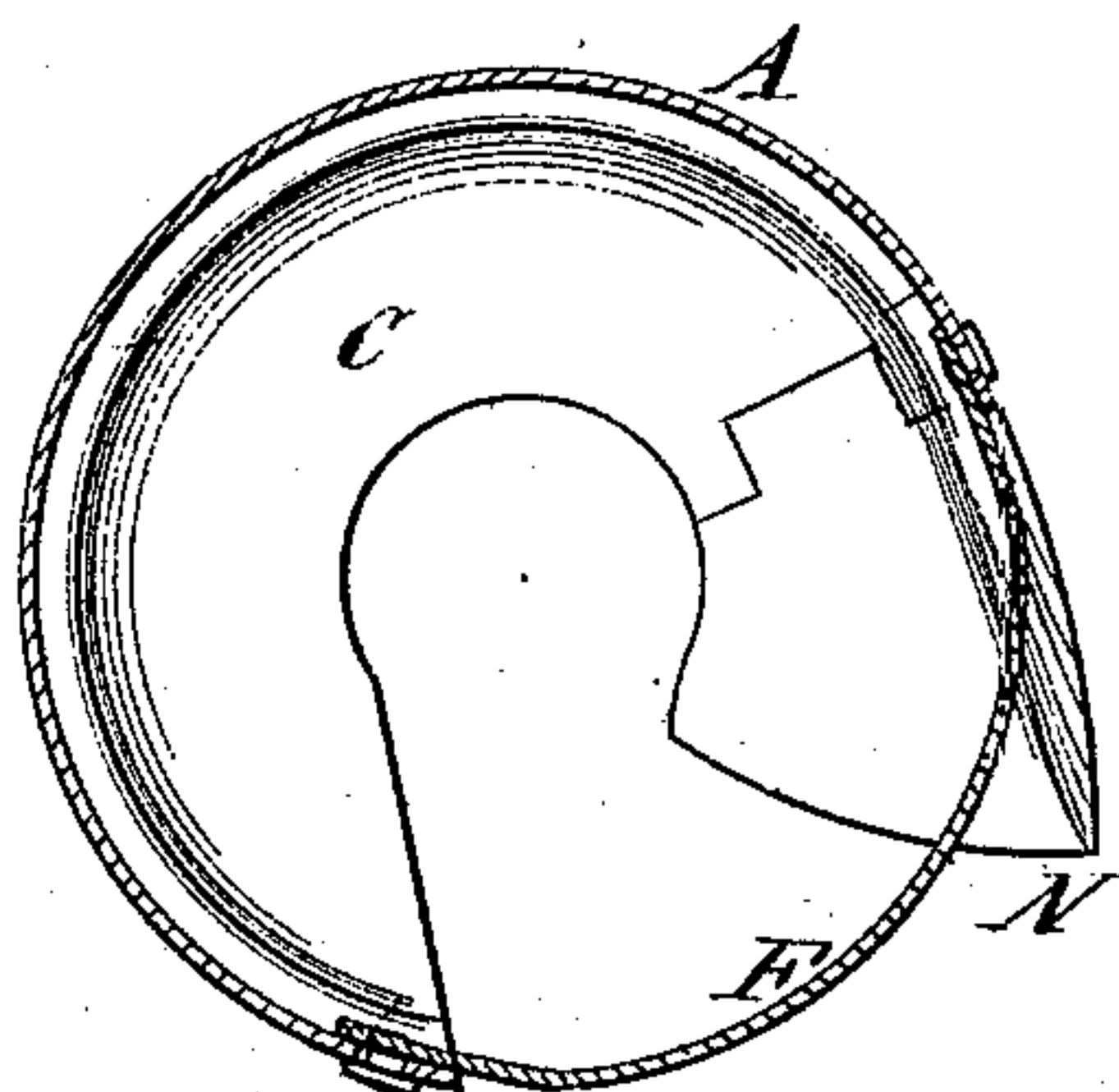
Patented July 27, 1875.



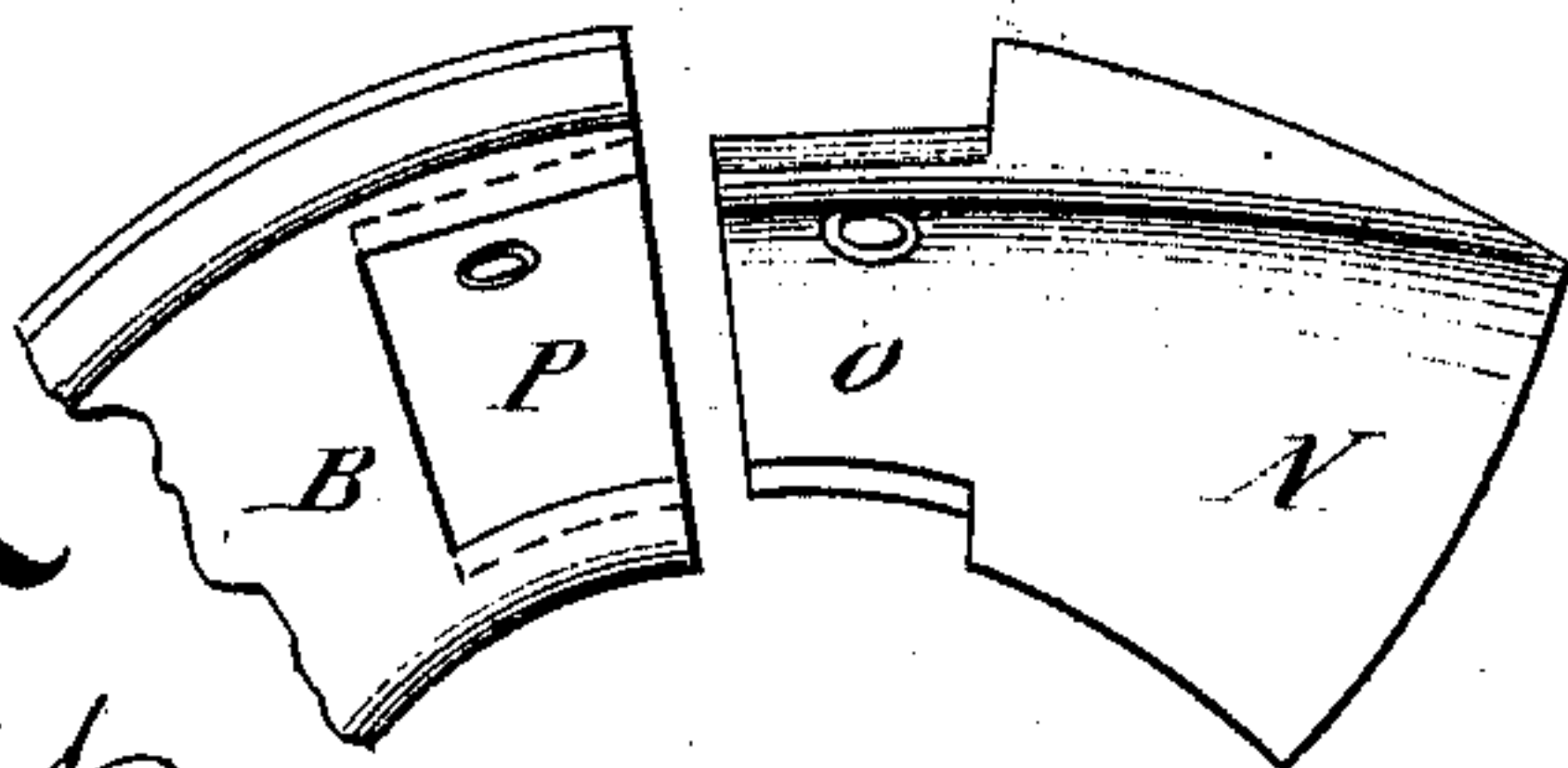
*Fig. 2*



*Fig. 3*



*Fig. 4*



WITNESSES:

*E. Verma*  
*A. J. Perry*

INVENTOR:

*J. E. Hall*  
BY *Munn*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOSEPH E. HALL, OF PAXTON, ILLINOIS.

## IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **165,998**, dated July 27, 1875; application filed May 28, 1875.

*To all whom it may concern :*

Be it known that I, JOSEPH E. HALL, of Paxton, in the county of Ford and State of Illinois, have invented a new and Improved Earth-Auger, of which the following is a specification :

The invention will first be described in connection with drawing, and then pointed out in the claims.

Figure 1 is a perspective view of my improved auger with the door detached. Fig. 2 is a top view. Fig. 3 is a horizontal section, and Fig. 4 is a detail of a detachable bit and a portion of the auger bottom.

A is the barrel, and B the bottom, in the angle of which I arrange the curved plate C, to cause the earth to slide upward into the body of the auger more directly and with less tendency to pack in the angle than when arranged in the common way. Around the bottom of the auger is a band, D, onto which the barrel A is fitted at its lower end flush with the band to make the exterior surface smooth, and it is fastened by screws E, counter-sunk so as to avoid any projection of the heads. The door F is attached by the points H at the lower end, and the stud-screws I at the upper end of the edges G, engaging with the sockets J and notches K respectively, in the barrel, the edges G being fitted inside of the

edges of the barrel, and they are fastened by a screw, R. The lip L is hinged to the under side of the bottom of the barrel in the clearance, where it does not obstruct the turning of the auger, and it is contrived to drop down on the bit N when the auger is raised, and convert the auger into a sand-bucket by closing the throat. The bit is attached by a dovetail-shaped shank, O, on it, and a corresponding socket, P, in the auger bottom, for readily detaching it. The door and the lip L are only used when boring in sand, for retaining and lifting it out, but they are not needed for clay and other hard earths.

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

1. A detachable bit, N, having the dovetailed shank O, combined with a bottom, B, having corresponding socket P, as and for the purpose specified.

2. The door F, having its edges G, fitted inside of the barrel and attached by the studs H I, and notches J K, substantially as specified.

JOSEPH E. HALL.

Witnesses:

CALVIN H. FREW,  
ANDREW H. SKIDMORE.