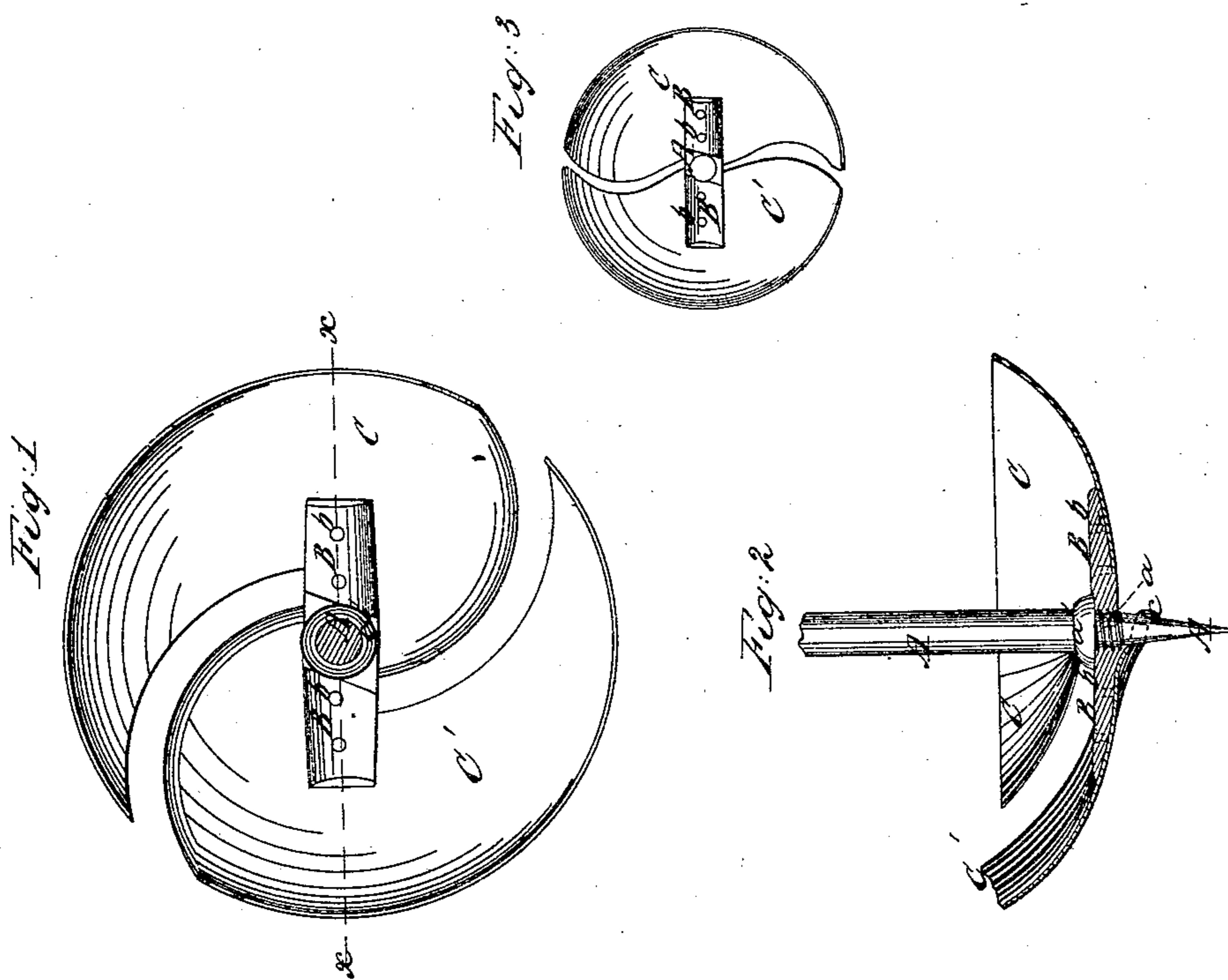


A. S. Ballard.

Earth Auger.

Nº 30,175.

Patented Sept. 25, 1860.



Witnesses.

H. York Arlee
Sewidcombe

Inventor.

A. S. Ballard
By his Attorney
Thos. L. Dodge

UNITED STATES PATENT OFFICE.

ALLEN S. BALLARD, OF MOUNT PLEASANT, IOWA, ASSIGNOR TO HIMSELF AND
R. I. ROBESON, OF MOUNT PLEASANT, IOWA.

EARTH-BORER FOR POST-HOLES, &c.

Specification of Letters Patent No. 30,175, dated September 25, 1860.

To all whom it may concern:

Be it known that I, ALLEN S. BALLARD, of Mount Pleasant, in the county of Henry and State of Iowa, have invented a new and useful Improvement in the Manufacture of Earth-Borers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a plan view with the shaft A cut off, to show more fully the construction of the parts; Fig. 2, a vertical section in the line x, x , of Fig. 1, and, Fig. 3, a detached plan view of another shaped bit, or scoop and brace.

Similar letters of reference in each of the several figures represent like parts in each of the drawings.

The nature of my invention consists, in the manufacture of an earth-borer in separate parts, arranged and operating as hereinafter explained, for the purpose, of the more perfect boring of holes in the ground for the insertion of posts.

To enable others skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

A, is the shaft, of my auger; B, the brace riveted to the bits or plates C, C', at b, b , and having a thread cut in it to accommodate the screw a , on the shaft A.

In the manufacture of my auger the two plates are first stamped into the shape required, either as in Figs. 1 or 3. The brace B, having the required shape, is riveted as shown to the aforesaid plates C, C'. The

leader A', of the shaft A, which is pointed at its lower end as shown and which has a projection a' , and screw a , is then screwed into the threads in the brace cut for its reception, and the auger is ready for use.

The two shapes of bits or plates shown in Figs. 1, and 3, I consider as the best for use, as they cut a clean, sliding, cut.

The points c , of the bits or plates C, C', as will be observed, surround the leader A', in such a manner as to draw the auger down, rapidly, without pressure from above, and loosen the earth around the shaft, which prevents the great friction on the shaft, which would otherwise occur, and consequent detention of the auger.

This is obviously a great improvement over the earth-borers heretofore in use. Owing to the concave shape of the bits or plates, they can be made of thin sheets of iron or other metal, and consequently will be of less bulk and more strength, will bore faster, and a hundred per cent. easier, than any other auger known to me.

Having thus fully described my improvement in the manufacture of earth borers, what I claim as my invention, and desire to secure by Letters Patent, is—

The manufacture of earth borers, in separate parts, all arranged and operating substantially as and for the purposes set forth herein.

ALLEN S. BALLARD.

Witnesses:

W. D. LEEDHAM,
CHARLES McMILLAN.