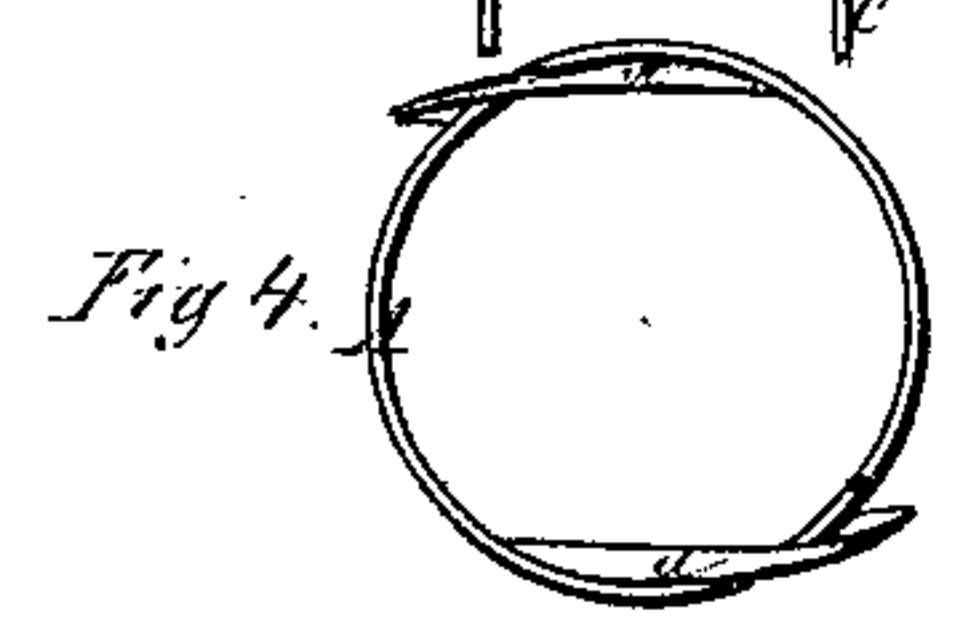
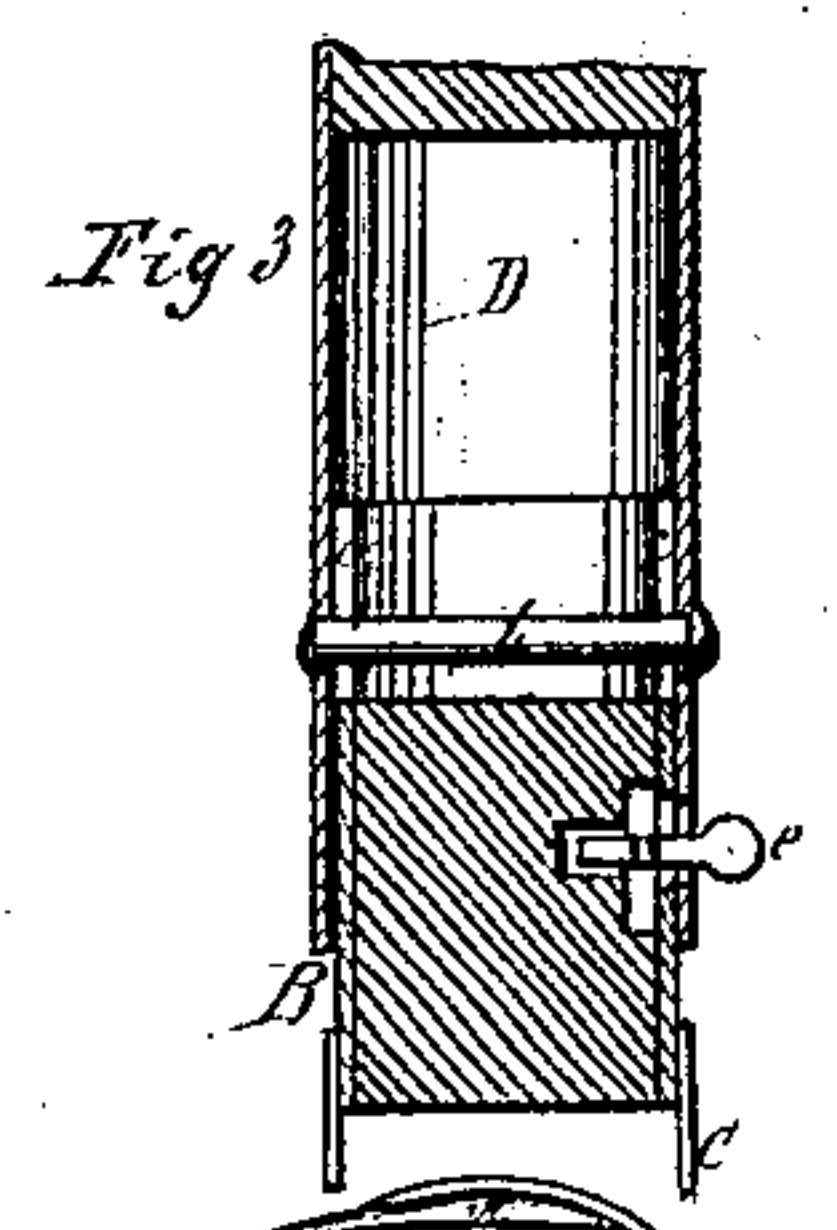
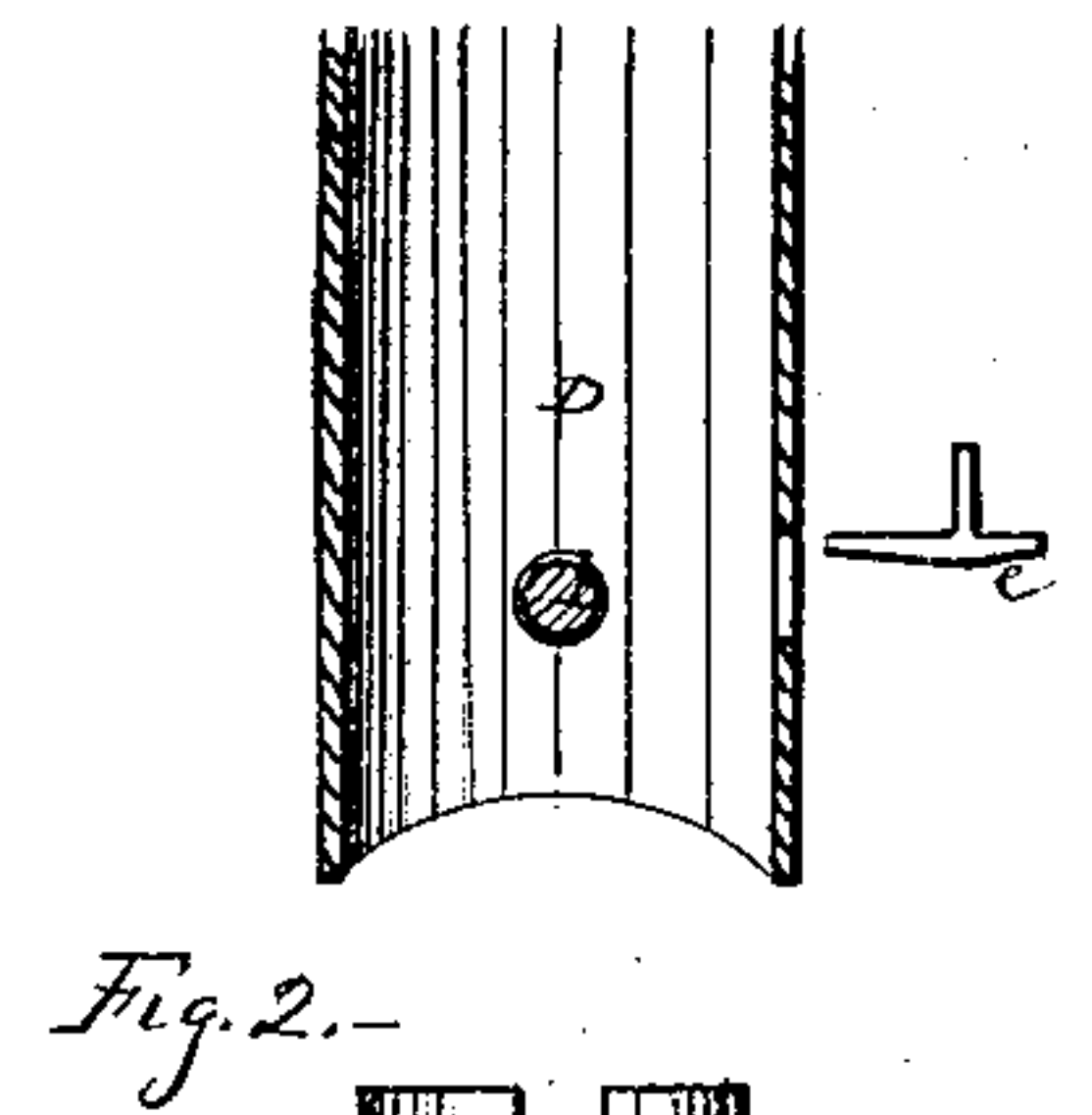
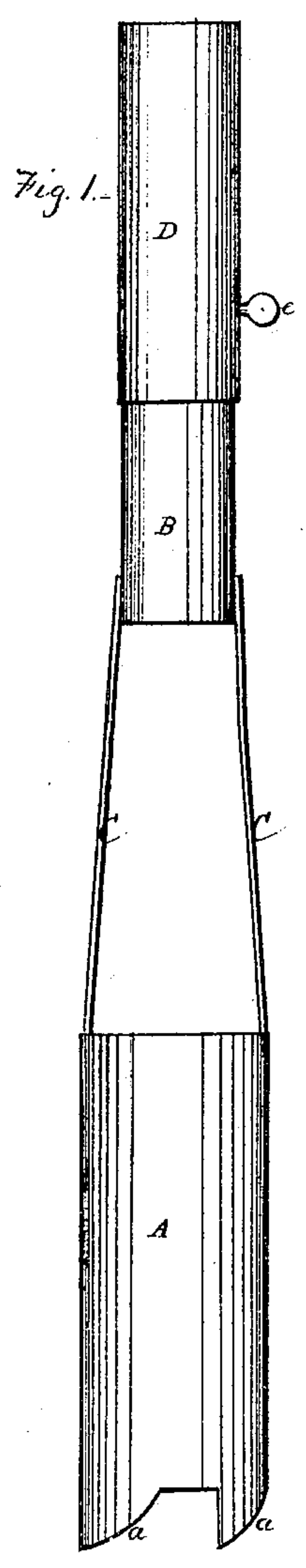


*T. Orchard,*

*Earth Auger.*

*No. 109,930.*

*Patented Dec. 6, 1870.*



*Witnesses*  
*H. P. Boone*  
*J. L. Boone*

*Inventor.*  
*Thomas Orchard*  
*by his Atty<sup>o</sup>*  
*C. W. H.*

# United States Patent Office.

THOMAS ORCHARD, OF LINCOLN, CALIFORNIA.

Letters Patent No. 109,930, dated December 6, 1870.

## IMPROVEMENT IN COUPLINGS FOR EARTH-BORING AUGERS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, THOMAS ORCHARD, of Lincoln, county of Placer, State of California, have invented an Improved Earth-boring Auger; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements, without further invention or experiment.

My invention relates to an improvement in augers, such as are employed in boring wells, post and other holes, in the earth; and

It consists in an improved coupling, by which the lengths may be expeditiously joined as the depth increases.

Referring to the accompanying drawing for a more complete explanation of my invention—

A is a short cylinder of metal, open at top and bottom, and having its lower end formed into cutters or bits, *a a*, which are formed by extending and expanding, by swaging or otherwise, the lower edge of the cylinder A, so that their cutting-edges describe a circle somewhat larger than the cylinder. This gives the latter room to turn without friction against the sides of the hole.

The cylinder A is connected with the first joint B of the smaller operating tube by straps C C.

As the well increases in depth more tubes, as D, are added, being joined to the first by a short bar, *b*, which extends across the upper tube a short distance above its mouth, as shown in Figure 3.

At the top of the tube B two vertical slots, *c c*, are made on opposite sides, and these are extended at their lower ends a short distance horizontally, forming the slots *d d*.

When this tube enters the tube D the bar *b* passes down to the bottom of the vertical slots, and one of the tubes being then turned a short distance relatively to the other, the bar *b* is carried into the horizontal slots *d*, and the two tubes are thus secured together.

In order to lock the tubes together, and prevent their separation in case it should become necessary to turn the auger backward, a slot is made through the sides of the tubes B and D, and a short pin, *e*, is introduced, thus holding the whole securely.

The operation is as follows:

The tube A is turned around in the hole, the cutters *a a* taking up the earth till the tube is sufficiently full, when the whole is withdrawn and emptied.

Having thus described my invention,

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

The coupling and locking device, consisting of the bar *b*, the slots *c c* and *d*, and the pin *e*, substantially as herein described.

In witness that the above-described invention claimed by me, I have hereunto set my hand and

THOS. ORCHARD. [L. s.]

Witnesses:

JOHN ZIEGENBEIN,  
H. C. NIEMEYER.