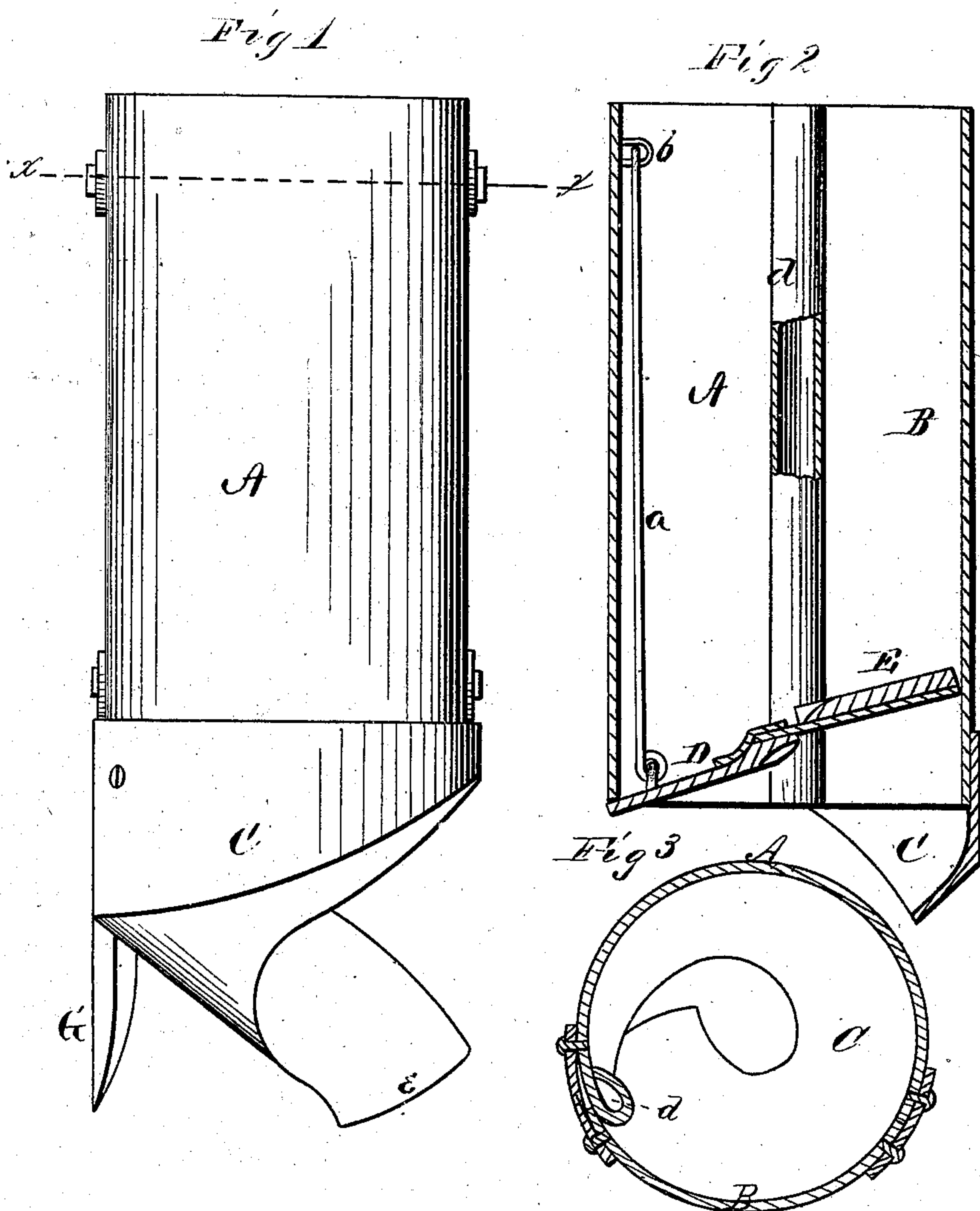


R. B. PALMER.
Earth-Augers.

No. 150,601.

Patented May 5, 1874.



WITNESSES:
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By

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UNITED STATES PATENT OFFICE.

RICHARD B. PALMER, OF CHAMPAIGN CITY, ILLINOIS.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **150,601**, dated May 5, 1874; application filed March 10, 1874.

To all whom it may concern:

Be it known that I, RICHARD B. PALMER, of Champaign City, in the county of Champaign and in the State of Illinois, have invented certain new and useful Improvements in Earth-Boring Augers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of an earth-auger, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation, and Fig. 2 a vertical section, of my earth-auger. Fig. 3 is a cross-section of my earth-auger through the line *x x*, Fig. 1.

The cylinder of my earth-auger is made in two parts, A and B, the former of which has the bottom C secured to it. The part B is bolted to the part A for the purpose of lifting sand and slush when boring in that kind of earth. This part is used in connection with a false bottom, D, to which is attached a valve, E, to admit the filling of the cylinder with sand or slush. The false bottom D is supported by means of a rod, *a*, hooked to a staple, *b*, near the top of the cylinder. By unhooking this rod the false bottom will fall, thus allowing the contents of the cylinder to pass out without removing the part B of the cylinder. One edge of the part A of the cylinder is turned over inward, forming an air-tube, *d*, the entire length of the cylinder, to conduct air from the top to the bottom thereof. The main bottom C of the auger is curved, as shown, allowing the air to pass freely from the lower end of the cylinder, under the bottom of the auger. This curve forms a complete air-chamber, that

cannot be stopped up when boring, thereby preventing all suction when raising the auger. The inner or upper side of the bottom C is a continuous mole-shaped twist, and is made concave, the twist extending one and one-fourth around, thereby facilitating the filling of the long cylinder with earth. It will also be seen that about three-fourths of the bottom is lifted above the cutting-bit *e* sufficiently high to allow a large boulder to pass in the auger almost as large as the cylinder, and cannot get back, as the cutting-bit passes clear under it, which is very important to raise large boulders out of the way. On the side of the bottom C is attached a knife or spur, G, for the purpose of cutting the earth from the wall on one side as deep as the bit cuts it on the other, so that the bit of the auger only has to make the under cut, to lift the earth free, thus avoiding clogging in the mouth of the bit or auger.

I am aware that the use of an air-tube in connection with an earth-auger is, broadly speaking, not new; hence I disclaim such as being my invention.

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

1. The earth-auger cylinder described, formed of two semi-cylindrical parts, A and B, the part A having one vertical edge turned over and forming an air-tube, *d*, and the two parts connected together by bolts or rivets, substantially as shown, and for the purposes set forth.

2. The auger-bottom C, twisted as described, and the greatest portion elevated above the cutting edge or bit *e*, and provided with the knife G, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of February, 1874.

RICHARD B. PALMER.

Witnesses:

C. L. EVERT,

JOSHUA DICKERSON.