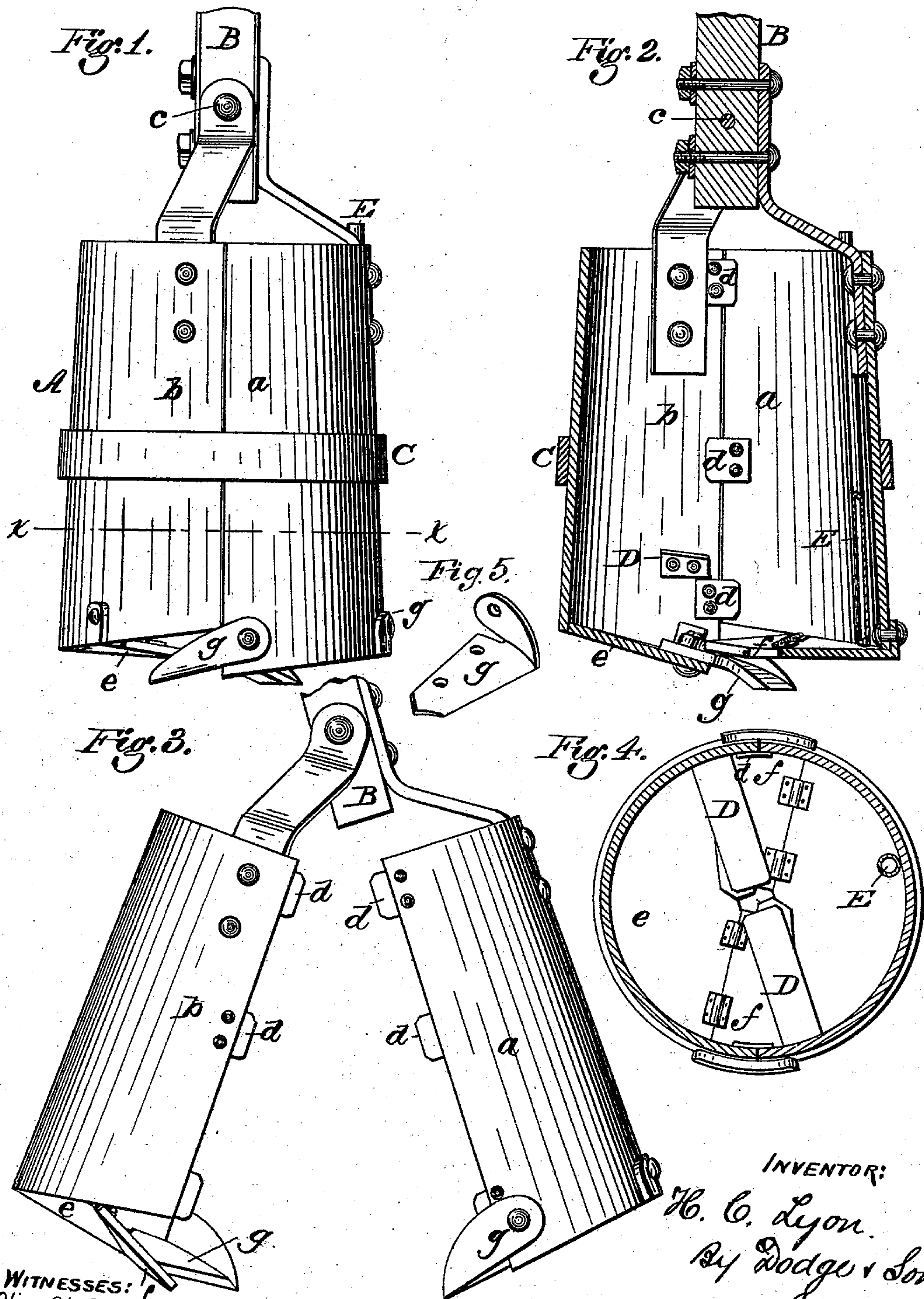


H. C. LYON.
EARTH-AUGER.

No. 173,482.

Patented Feb. 15, 1876.



WITNESSES:
Hill & Dodge.
Donn Switchell.

INVENTOR:
H. C. Lyon.
By Dodge & Son.
Atty.

UNITED STATES PATENT OFFICE.

HENRY C. LYON, OF WEBSTER, MICHIGAN.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **173,482**, dated February 15, 1876; application filed August 19, 1875.

To all whom it may concern:

Be it known that I, HENRY C. LYON, of Webster, in the county of Washtenaw and State of Michigan, have invented certain Improvements in Earth-Augers, of which the following is a specification:

My invention consists in a boring-cylinder divided vertically into two parts, which are hinged together in such manner that they may be opened apart to discharge the loose earth from the interior, and an exterior removable band, by which the body is held together; in providing the interior of the cylinder with blades, and in other details, as hereinafter fully described.

Figure 1 represents a side elevation of my implement; Fig. 2, a vertical central section of the same; Fig. 3, a side view of the same opened to discharge the earth; Fig. 4, a cross-section on the line *x x*; Fig. 5, a view of one of the lips.

A represents the cylinder or body, made of sheet metal, as usual, and divided vertically into two equal parts, *a* and *b*, which have their upper ends provided with arms attached to a vertical shaft or handle, B, the arms of the part *a* being attached firmly and rigidly to the handle, while the arms of the part *b* are attached by a pivot-pin, *c*, so that the two parts may be swung apart, as represented in Fig. 3, to discharge the earth from the inside after the tool is drawn from the hole. When the tool is in use the two parts of the body are secured firmly together by a band, C, forced down on the outside, as shown in Figs. 1, 2, and 3, the body being tapered down toward its upper end, as shown, in order to permit the use of a band small enough to pass down within the hole cut by the foot of the cylinder, and to facilitate the drawing of the parts tightly together. The abutting edges of the two parts are provided on the inside with lips *d*, which serve to hold the edges exactly in line, and produce thereby a smooth exterior surface. The lower end of the cylinder is closed, with the exception of two inlet-openings, by two bottom plates, *e*, which are

attached to the respective parts of the body, inclined in opposite directions, and provided at their lower front edges with cutting-lips *g*. The cutting-lips are made of sheet-steel, in the form represented in Fig. 5, and secured to the body by rivets or bolts, the rear horizontal edge being secured on the inside of the cylinder, while the vertical lip at the end is secured on the outside of the same, as shown. The cutters made in this form are cheap and strong, are easily applied, and are not impaired by ordinary wear.

In order to prevent the escape of sand and soft material when the tool is drawn up, hinged valves *f* are arranged within the body to cover the inlet-openings, as clearly shown in Figs. 2 and 4. Air is admitted into the hole below the tool, so that it may be readily withdrawn when filled. In order to loosen the earth in the cylinder, and facilitate its rise therein as the tool descends, I secure to the inside of the cylinder oblique blades D, as shown in Figs. 2 and 4, the blades being secured firmly and rigidly to the cylinder, so as to move therewith.

By my method of construction I produce a tool which is cheap and simple in construction, and at the same time durable and rapid in its operation.

Having described my invention, what I claim is—

1. The combination of the tapered body A, consisting of the parts *a* and *b*, hinged together, and the band C, applied as shown.
2. In combination with the body A, the cutting-lips constructed in the form shown and described, and applied in the manner set forth.
3. In combination with the boring-cylinder, constructed and operating as shown, the oblique blades D, secured rigidly to the interior thereof, as shown.

HENRY C. LYON.

Witnesses:

BURTON ROYCE,
FERDINAND GRISSON.