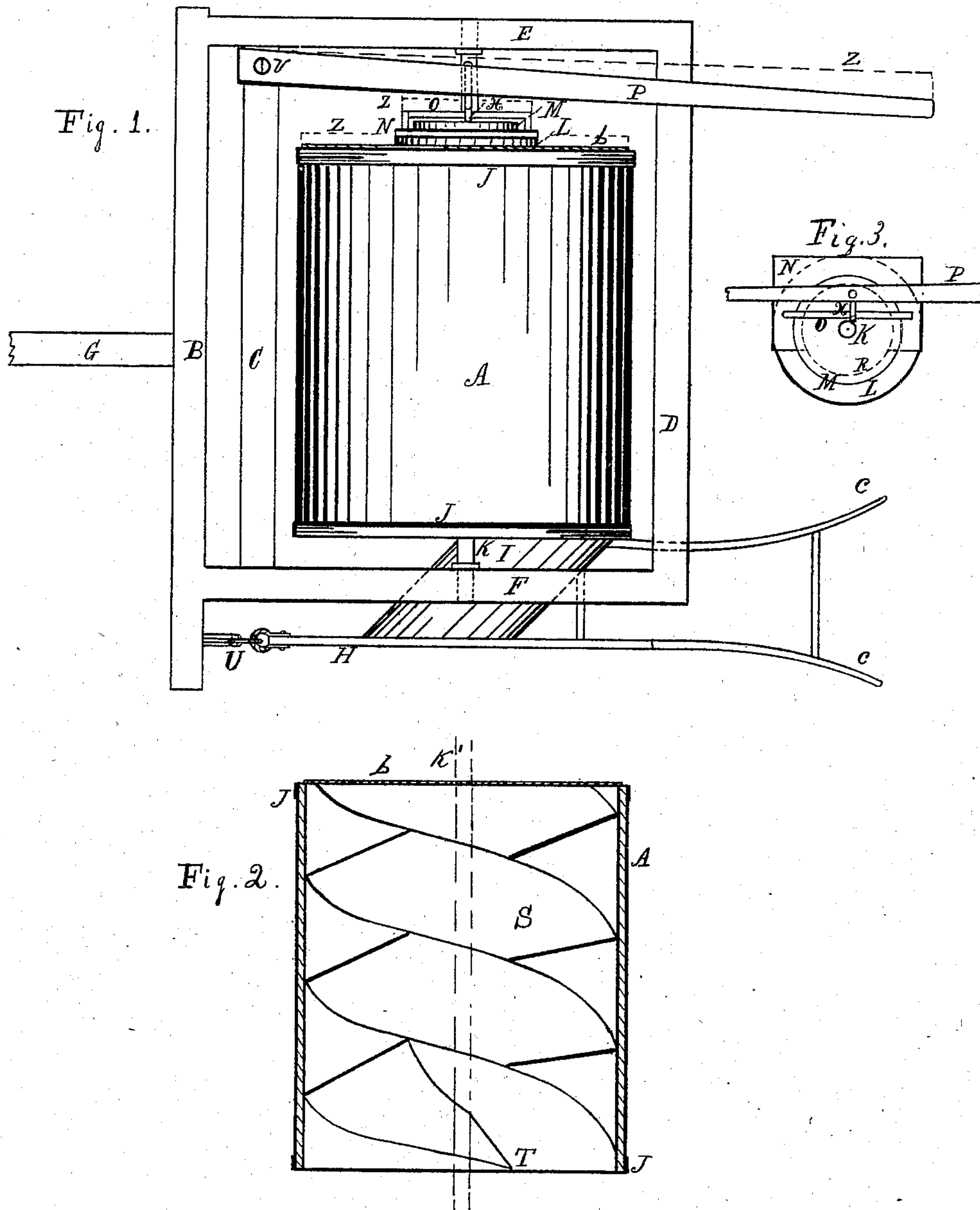


A. B. SMITH.
Excavators.

No. 138,539.

Patented May 6, 1873.



Witnesses

Patrick Greene
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Inventor.

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UNITED STATES PATENT OFFICE.

AMROY B. SMITH, OF DENISON, TEXAS.

IMPROVEMENT IN EXCAVATORS.

Specification forming part of Letters Patent No. **138,539**, dated May 6, 1873; application filed March 22, 1873.

To all whom it may concern:

Be it known that I, AMROY B. SMITH, of Denison, in the county of Grayson and State of Texas, have invented a new and useful Improvement in Earth-Excavators, of which the following is a specification:

The nature of the present invention consists in the combination of a plow with a rotating cylinder, which is provided with an internal helical plate or screw to carry earth from the plow into the cylinder, and with a circular end plate, which can, by means of a lever, be moved from the end of the cylinder and allow the earth to pass out at the opposite end from the end it entered, as the whole is hereinafter fully described and shown.

In the drawing, Figure 1 is a plan or top view of my improved excavator in position for use; Fig. 2, a horizontal section of the screw-cylinder removed from the frame of excavator and other mechanism; Fig. 3, an elevation of the devices for opening and closing the end of the cylinder.

A represents a cylinder, which is made of wood, or other suitable material, and of such size as can be rotated over the ground by one or more teams, and at the same time readily turned round. The inside of this cylinder is provided with a screw or helical plate, S, which, at the end adjoining the shovel or plow H I, terminates in a thin edge, T, so as to catch the earth thrown from the plow and carry it into the cylinder A; and the opposite end of the cylinder is provided with a circular plate or head, b, to hold the earth in the cylinder until a sufficient quantity has been gathered, when the contents of cylinder are discharged by the following means: A circular plate or wooden piece, L, Figs. 1 and 3, is fastened to the head or plate b, and a smaller circular piece, M, is fastened to the part L, forming a clutch-cylinder to receive a clutch-plate, N,

which is so operated upon by a lever, P, and clutch attachments O X, as to be moved from the cylinder A, as shown by dotted lines z, and allow the contents to be discharged between the cylinder and plate b. The cylinder A is hung on a shaft, K, running through the cylinder and has bearings in the frame-pieces E F, and the clutch-cylinder L M is hung loosely on the shaft K, so that when the latter rotates the clutch arrangement will not be affected. The particular means for attaching the lever P to the clutch-cylinder L M consists of a metal rod, O, whose ends are bent at right angles and fastened to the plate N and of a staple, x, passing around the rod O and passing through the lever. The frame B C E F D is, by means of the shaft K, carried a distance above the ground corresponding to half of the diameter of the cylinder A, and as it is moved forward by the tongue attachment G the cylinder rotates and the plow H I, fastened to the frame-piece B by a coupling, U, is also propelled, the guiding being done by the handles c c. To discharge the contents of cylinder A the lever P is moved as per dotted lines z.

I claim, and desire to secure by Letters Patent—

1. The combination of the cylinder A, provided with a suitable screw, S, with the plow H I and frame B C E F D, as and for the purpose set forth.

2. The combination of the cylinder A, constructed as set forth, with the plow H I, the plate b, clutch-cylinder L M, clutch attachments N X O, and lever P, as and for the purpose specified.

AMROY B. SMITH.

Witnesses:

WM. FRASIER,
GEO. W. FALIK.