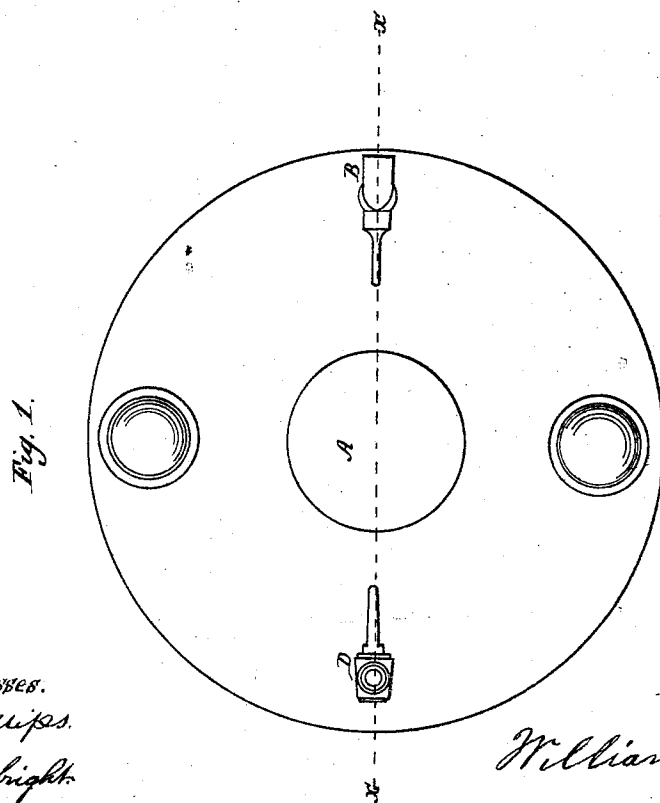
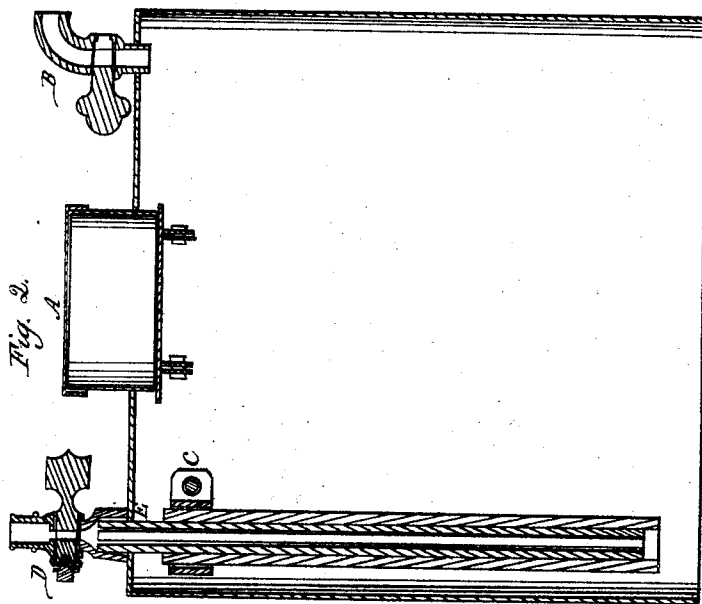


W.S. Smith,
Sinking Hollow Files,
No 57,784, Patented Sept. 4, 1866.



Witnesses.
J. H. Phillips.
Geo. C. Lambright.

Inventor:
William S. Smith.

UNITED STATES PATENT OFFICE.

WILLIAM S. SMITH, OF NOYESVILLE, ILLINOIS.

IMPROVED MACHINE FOR SINKING HOLLOW PILES.

Specification forming part of Letters Patent No. **57,784**, dated September 4, 1866.

To all whom it may concern:

Be it known that I, WILLIAM S. SMITH, of Noyesville, in the county of Cook and State of Illinois, have invented a new and useful Improvement on a Machine for Sinking Hollow Piles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top or plan view of my improvement, and Fig. 2 is a vertical section through the line *x x* of Fig. 1.

The nature of my invention consists in providing an incompressible discharge-pipe, which shall be throughout the whole of its length or part of it flexible. This flexible discharge-pipe is connected by an air-tight joint or fastening, C, to the rigid portion of the same pipe, that passes up through the cap or air-lock (either may be used) at E, and so communicates, by means of the cock D, with the exterior atmosphere.

Operation: Having sunk a hollow pile so far that the resistance to displacement and from friction on the outer and inner surfaces of the pile becomes so great that it becomes necessary to diminish it in order to sink the

pile farther, the cap or air-lock is bolted upon the top of the pile, and the discharge-pipe and hands are passed down through the man-hole or valve A, which opens downward. This valve is then closed, and air is forced into the pile through the pipe B, by means of air-pumps, until the pressure of the compressed air upon the surface of the water is sufficient to force it up through the discharge-pipe and out under the bottom of the pile. When the bottom has thus been laid bare inside the hollow pile the lower end of the discharge-pipe is thrust into the solid material of the bottom, which must be loosened by digging, if necessary, when the current of air escaping through the discharge-pipe will catch up and carry away this material, discharging it on the outside.

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

The method of excavating solid materials from the interior of hollow piles by means of a current of air, using for this purpose the flexible discharge-pipe, as herein described.

WILLIAM S. SMITH.

Witnesses:

JOHN S. HOLLINGSHEAD,
JOHN D. BLOOR.