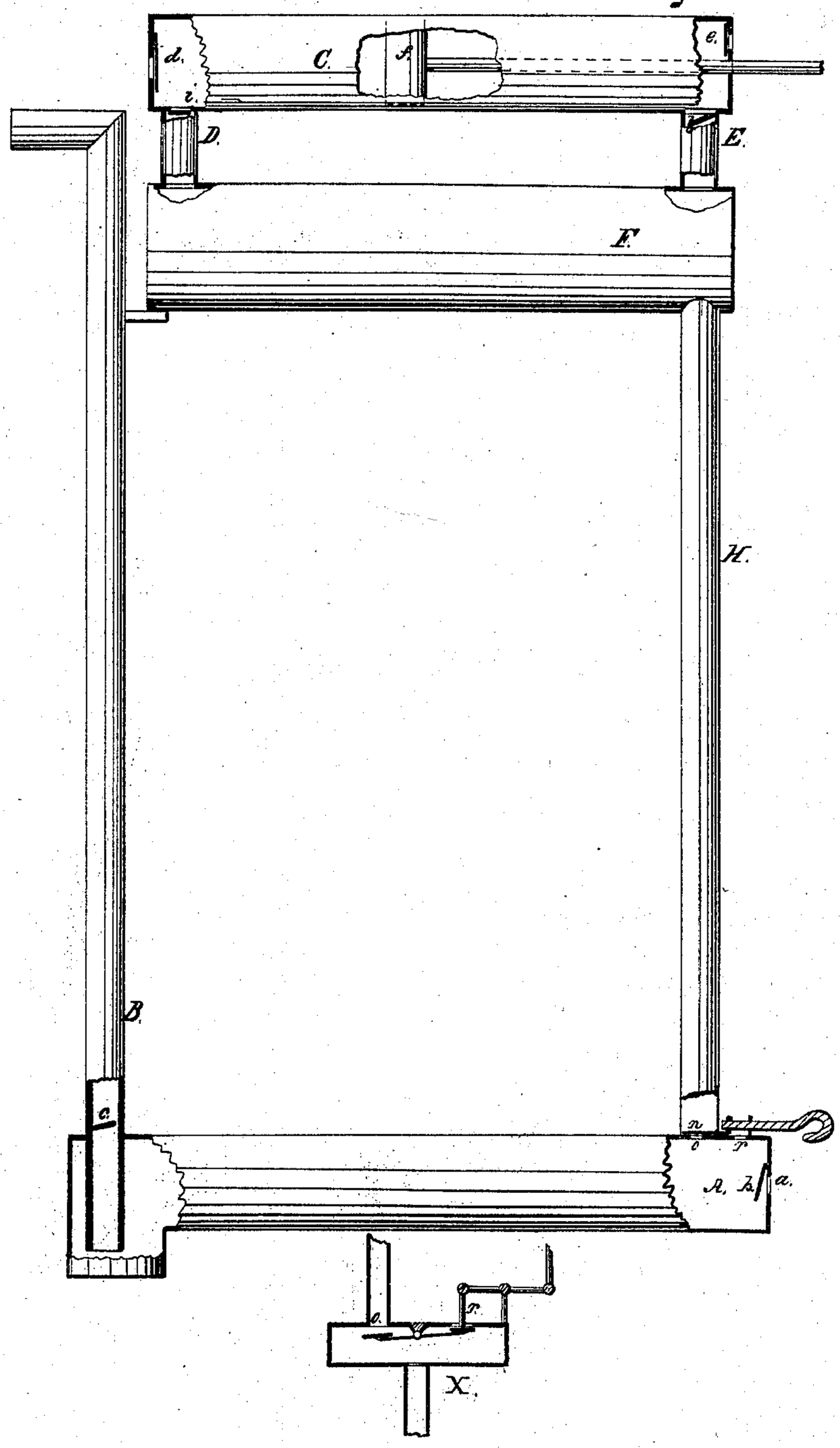
L. Keiler,

Ejecting Pump,

No. 17,154. Patented Apr. 28, 1857.



UNITED STATES PATENT OFFICE.

LEVI KEILER, OF CATAWISSA, PENNSYLVANIA.

ATMOSPHERIC PUMP.

Specification of Letters Patent No. 17,154, dated April 28, 1857.

To all whom it may concern:

Be it known that I, LEVI KEILER, of Catawissa, in the county of Columbia and State of Pennsylvania, have invented a new and useful Improvement in Mine-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, which represents a side view of the pump with portions broken to show interior arrangement.

The nature of my invention consists in a certain arrangement hereinafter to be set forth for causing the elevation of water from mines by the condensation of air, in a simple and effectual manner.

In the drawing A is a chamber receiving the water to be elevated through an opening *a*, governed by a valve *b*.

B is the discharge pipe running into the chamber A, having near its bottom a valve *c*.

C is the air condensing cylinder, with valves *d* and *e* at its opposite ends, and a piston *f*. It communicates by pipes D and E with the receiving chamber F, in which pipes are valves *i* and *l*.

From the chamber F runs a pipe H to the water chamber A. The communication of this pipe with the chamber can be cut off by a valve *n*, so arranged that when it closes opening *o*, it will uncover an opening *r* in chamber A; and when pipe H communicates with the water chamber the opening *r* will be closed. Another construction for this cut off is shown at X.

In operation, air is forced into the chamber A, which is filled with water, forcing the contents to rise in the discharge pipe. The valve *b* being closed during the operation, when the chamber is emptied, or nearly so, valve *n* is made to cut off communication between pipe H and chamber A, as shown in the drawing. A fresh supply of water will then rush into chamber A, the air within said chamber passing out at opening *r*. The weight of water in the discharge pipe closes its valve during this operation. The valve *n* is then moved so as to open communication between the pipe H and the water chamber, and the condensed air forced into the chamber, causing a rise of water through the pipe B. During the operation the condensing pump will be kept in constant action, the valve *n* being moved at stated intervals by suitable mechanism. With proper strength of construction this arrangement will be found valuable in raising water from mines, and may with some modifications be adapted to pumps for ordinary purposes.

I am aware that the elevation of water by condensation of air is not new, and therefore do not wish to be understood as claiming anything more than the combination of the water receiver A and air induction pipe with the valve *n* acting with respect to the openings *o* and *r* as set forth, when said parts are arranged with respect to air condenser and discharge pipe substantially as described.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

LEVI KEILER.

Witnesses:

J. PERRIN FISSCHER,

WM. P. SMITH.