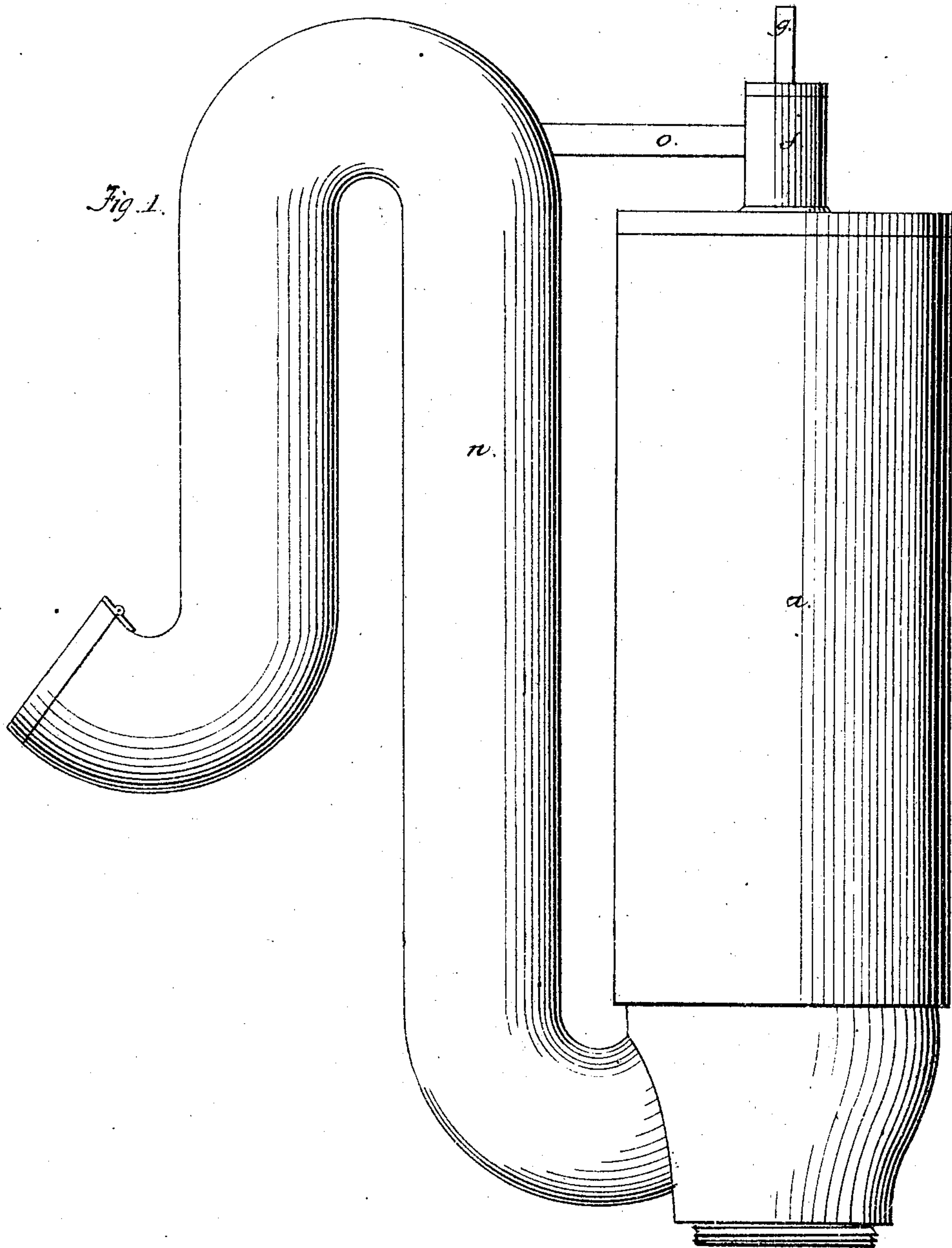


W. L. Horne.
Steam Water-Elevator.

N^o 75424

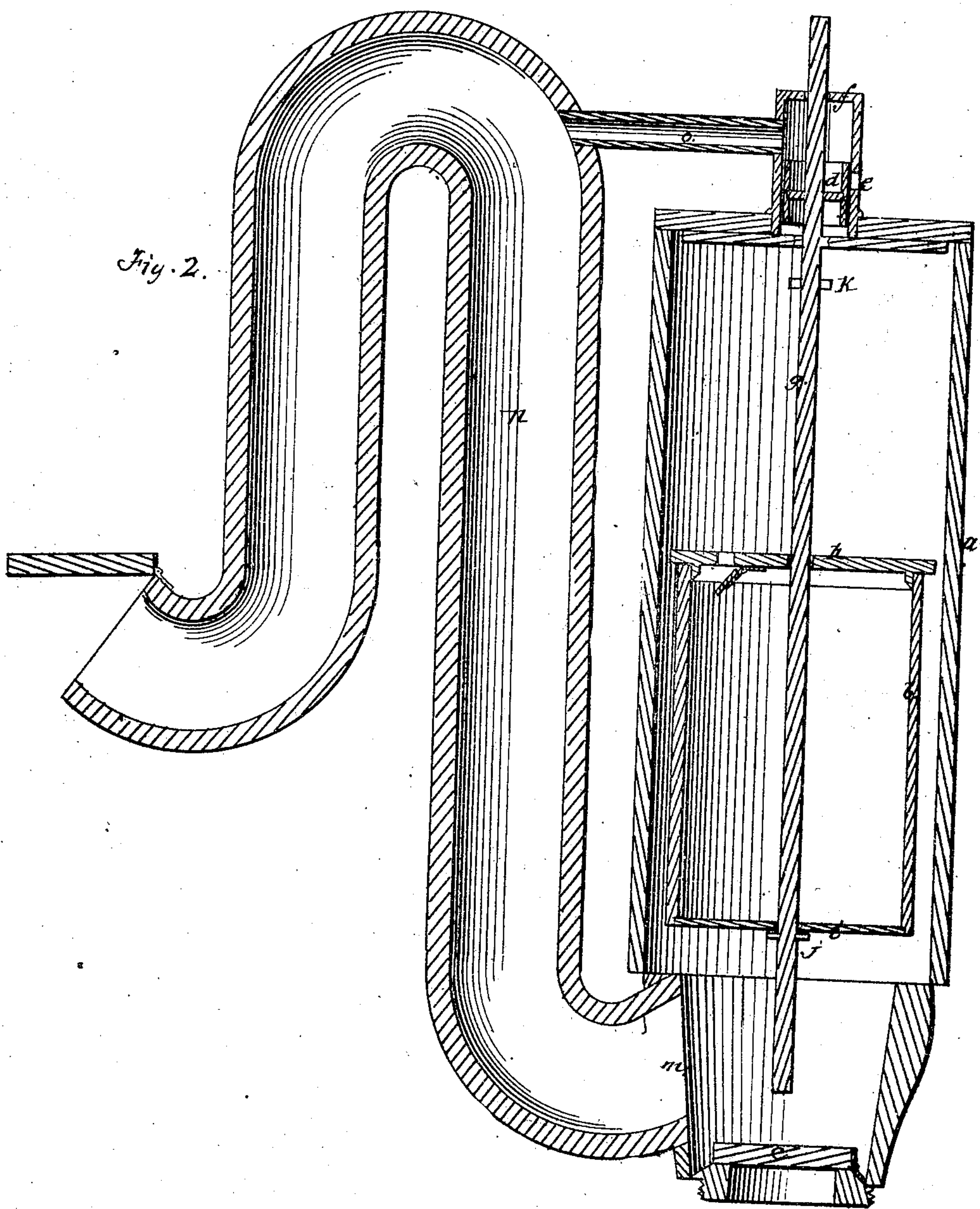
Patented Mar. 10, 1868



Attest:
J. Smith
L. E. Jones.

Inventor:
W. L. Horne
by Atty P. S. Everett

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Witness;
T. Smith
L. E. Jones.

Inventor;
W. L. Horne
by Atty. J. T. Everett

United States Patent Office.

WILLIAM L. HORNE, OF BATAVIA, ILLINOIS.

Letters Patent No. 75,424, dated March 10, 1868.

IMPROVEMENT IN STEAM WATER-ELEVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM L. HORNE, of Batavia, in the county of Kane, and State of Illinois, have invented a certain new and useful Improvement on Steam Water-Elevators; 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 accompanying drawings, and to the letters and marks thereon, which said drawings form part of this specification, and by—

Figure 1 show, in elevation, a water-elevator, with my improvement as a part thereof, and by Figure 2 a view, by vertical section, of the same.

In both of these figures like letters are used to designate like parts.

The present invention is of the character of an additional improvement to the invention on which Letters Patent were granted to me on the 28th day of May, 1867, wherein the water-elevator consists of an exterior cylinder, *a*, and an interior valve-cylinder, *b*, moved, in the one direction by water, and in the other direction by steam.

As is shown by fig. 2 of the drawings of this specification, to the lower part of the elevator there is an inlet-valve, *c*, for the admission of the water, and at the upper part of the elevator a steam-valve, *d*, for controlling the steam-port *e* of the steam or valve-chest *f*. The steam-valve is affixed to a rod, *g*, which passes through a hole in the cap *h* of valve-cylinder *b*, and through another hole in the cross-bar or plate *i*, attached to the lower end of the cylinder *b*, so that when the valve-cylinder *b* is forced downward by the pressure of the steam, the bar *i*, acting upon the pin or tappet *j*, will draw the rod *g* down, and with it the valve *d*, closing the steam-port, and as the water elevates the cylinder *b*—the water coming in on the condensation of the steam—the cap *h* of the cylinder *b* will act upon the pin or tappet *k*, carrying up the rod and valve *d*, and opening the steam-port for the admission of the steam. Fig. 2 of the drawings represents the parts in the condition at the end of the stroke of the cylinder *b* on the expulsion of the water.

The steam water-elevator, constructed as herein recited, and as set forth in the Letters Patent above referred to, is liable to be interrupted in its regular effective action by air or gas accumulating within it, and to avoid this is the object of the present invention, which consists in adding to or combining with the outlet or escape-port for the water, marked *m*, a siphon-pipe or tube, *n*. Whatever air or gas is driven down by the descent of the cylinder *b* to the port *m* will readily pass out through this siphon *n*, and whatever air, gas, or steam may lie above the steam-valve *d*, will pass out through the pipe *o* into the siphon, so that the water-elevator will not labor under the difficulty caused by air or gas accumulating therein.

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

The combination of the siphon *n* with the steam water-elevator, constructed and operated substantially as herein set forth.

This specification signed this 24th day of July, 1867.

Witnesses:

L. E. JONES,

THOS. T. EVERETT.

W. L. HORNE.