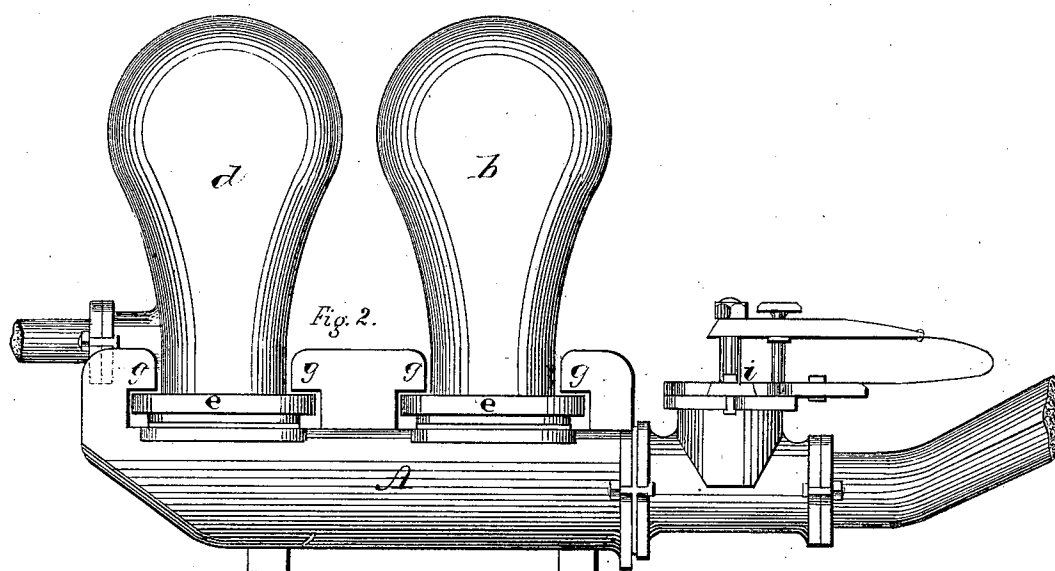
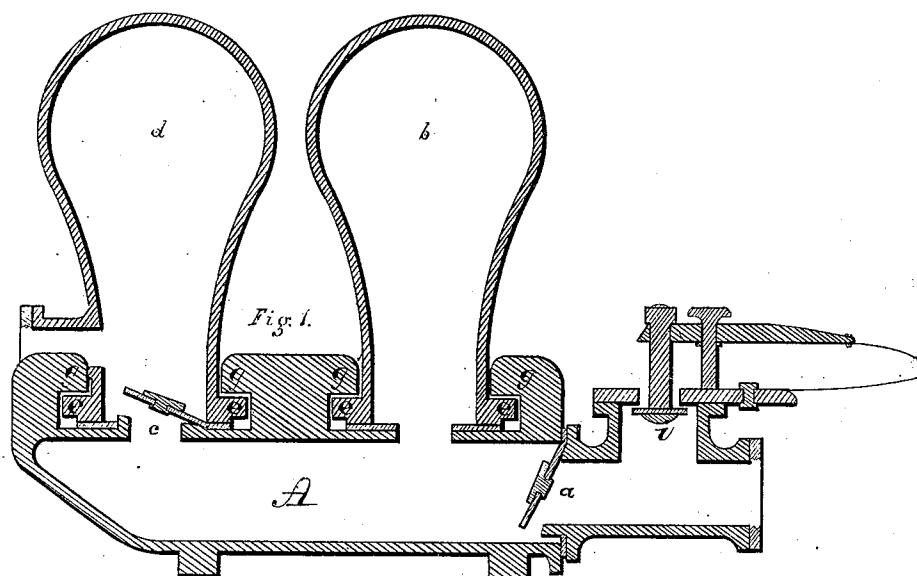


I. B. MILLINGTON.
Hydraulic Ram.

No. 200,081.

Patented Feb. 5, 1878.



Witnesses
Lowson W. Richards
W. B. Patton

Inventor
I. B. Millington

UNITED STATES PATENT OFFICE.

ISAAC B. MILLINGTON, OF COLUMBIA, PENNSYLVANIA.

IMPROVEMENT IN HYDRAULIC RAMS.

Specification forming part of Letters Patent No. **200,081**, dated February 5, 1878; application filed November 3, 1877.

To all whom it may concern:

Be it known that I, ISAAC B. MILLINGTON, of Columbia, Lancaster county, Pennsylvania, have invented a new Hydraulic Engine for the purpose of pumping water, of which the following is a specification:

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal section, and Fig. 2 is a side elevation of the same.

A represents the frame of the ram, which may be of any desired construction, and upon the top of which are placed the two air-chambers *b* & *d*. These chambers are placed in a line with the length of the frame, and have the flanges *e* formed upon their lower edges, so as to catch under the projections *g*, formed upon the top of the frame A. By placing a suitable packing under each chamber, a tight joint is formed, and yet both chambers may be readily removed whenever it may be necessary.

After the inflowing water has passed the maintaining-valve *a* it is immediately under both chambers, and is acted upon by the air in both of them, in such a manner as to force

the water forward and out through the discharging-chamber *d*. The valve *a* is placed between the regulating-valve *i* and the receiving-chamber *b*, so that none of the water may escape backward, and thus have its force lost. Where this valve is not used a great portion of the inrushing water reacts, and thus fully one-half of its power is lost.

By the use of a receiving-chamber, *b*, and a discharge-chamber, *d*, a great body of water may be raised by a very slight fall.

Having thus described my invention, I claim—

1. A hydraulic ram provided with a receiving-chamber, *b*, and a discharge-chamber, *d*, substantially as shown.

2. In a hydraulic ram, the location of the maintaining-valve *a* between the receiving-chamber *b* and the controlling-valve *i*, substantially as set forth.

ISAAC B. MILLINGTON.

Witnesses:

JOSEPH K. HALL,
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