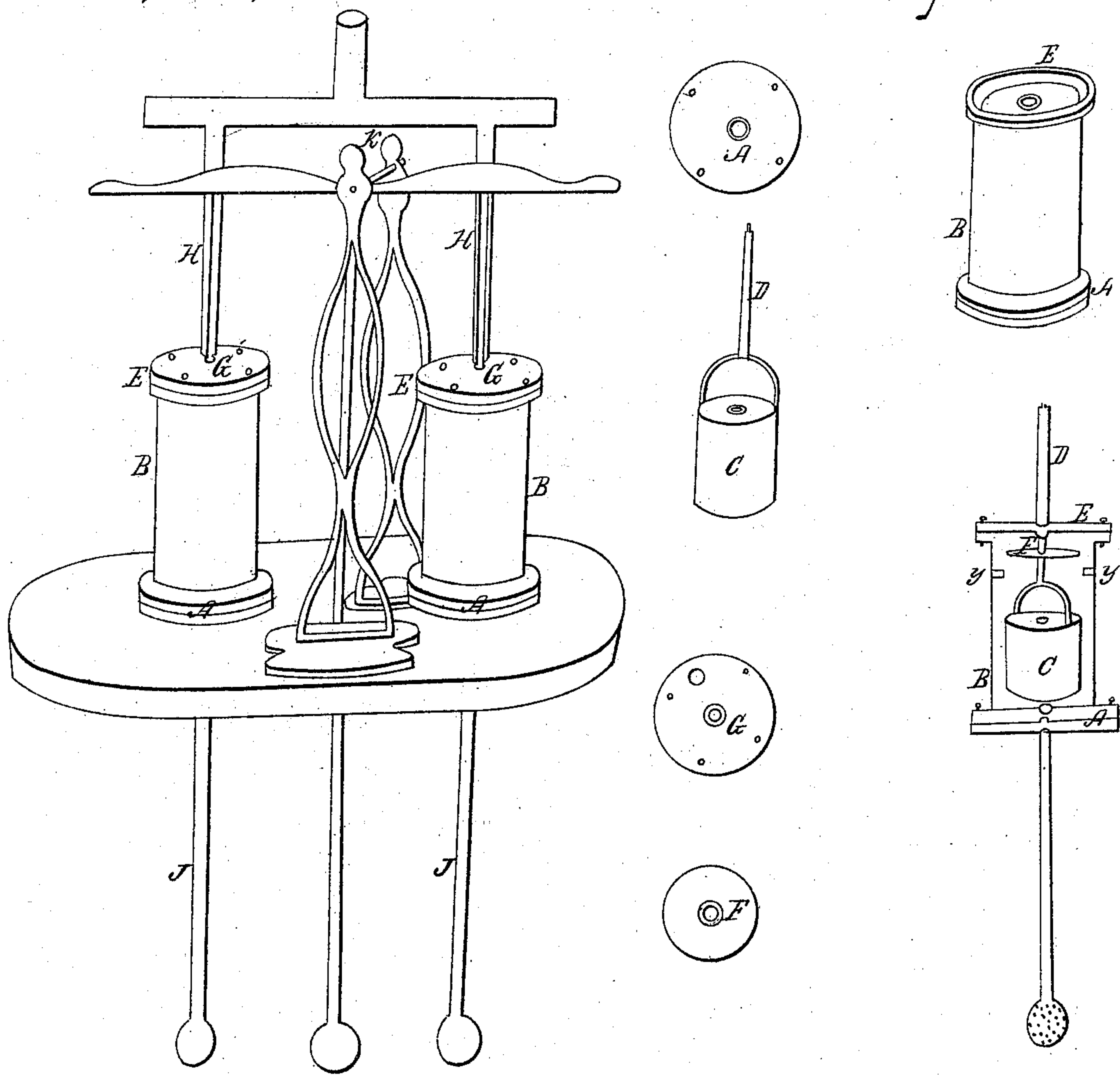


H. Zeng,

Double-Acting Pump,

Nº 21,043,

Patented July 27, 1858.



Witnesses;
Siebel & Parks
Georg. C. Schmidt

Inventor,
Henry Zeng.

UNITED STATES PATENT OFFICE.

HENRY ZENG, OF ELIZABETHPORT, NEW JERSEY.

PUMP.

Specification of Letters Patent No. 21,043, dated July 27, 1858.

To all whom it may concern:

Be it known that I, HENRY ZENG, of Elizabethport, in the county of Union, in the State of New Jersey, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of my improvement, which will enable any person skilled in the art to make and use the same.

In the accompanying drawings, Figure 1 is a perspective view of my improvement; Fig. 2 is a side sectional elevation of one of the cylinders; the remaining views show detached parts.

Similar letters of reference indicate corresponding parts in all the figures.

The cylinder B, piston C, piston rod D, cylinder bottom A, and cylinder head G, are all of the usual construction; the pistons are worked by brakes in the usual way; no special description of these parts therefore is necessary.

H, is the escape pipe, which passes through the head G, and communicates with the interior of the upper part of the cylinder B.

J, is the supply pipe which passes through the bottom A and communicates with the interior of the lower part of the cylinder B. An ordinary ball valve closes the upper end of the pipe J, and a similar valve in the piston C, closes the opening therein, in the usual manner.

My improvement consists in the employment of a loose plate or disk valve F, fitted

to and held in place in the upper part of the cylinder, by the piston rod D.

The operation is as follows: (y) is a ring or shoulder set in the upper part of the cylinder B, forming a valve seat for the valve F, and when the latter rests upon its seat (y) a water chamber is thus formed in the upper part of the cylinder B, between the valve F and head G. Pipe H is the exit aperture of this chamber. The water that remains above the piston is, by the rise of the latter, caused to lift the valve F, and fill the water chamber. When the piston descends, the valve F closes. On the next rise of the piston, the valve F is again lifted, and more water pressed into the chamber, which causes the contents before introduced to be forced out through pipe H, in the same manner as in other force pumps.

I do not claim, broadly, the employment of a water-chamber in the upper part of the pump cylinder, nor, broadly, the employment of a valve therein, but

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

The combination of a loose plate or disk valve F, with the piston-rod D, in the upper part of the cylinder B, substantially as and for the purpose herein shown and described.

HENRY ZENG.

Witnesses:

SIEBELT B. FIARKS,
GEORG. C. SCHMIDT.