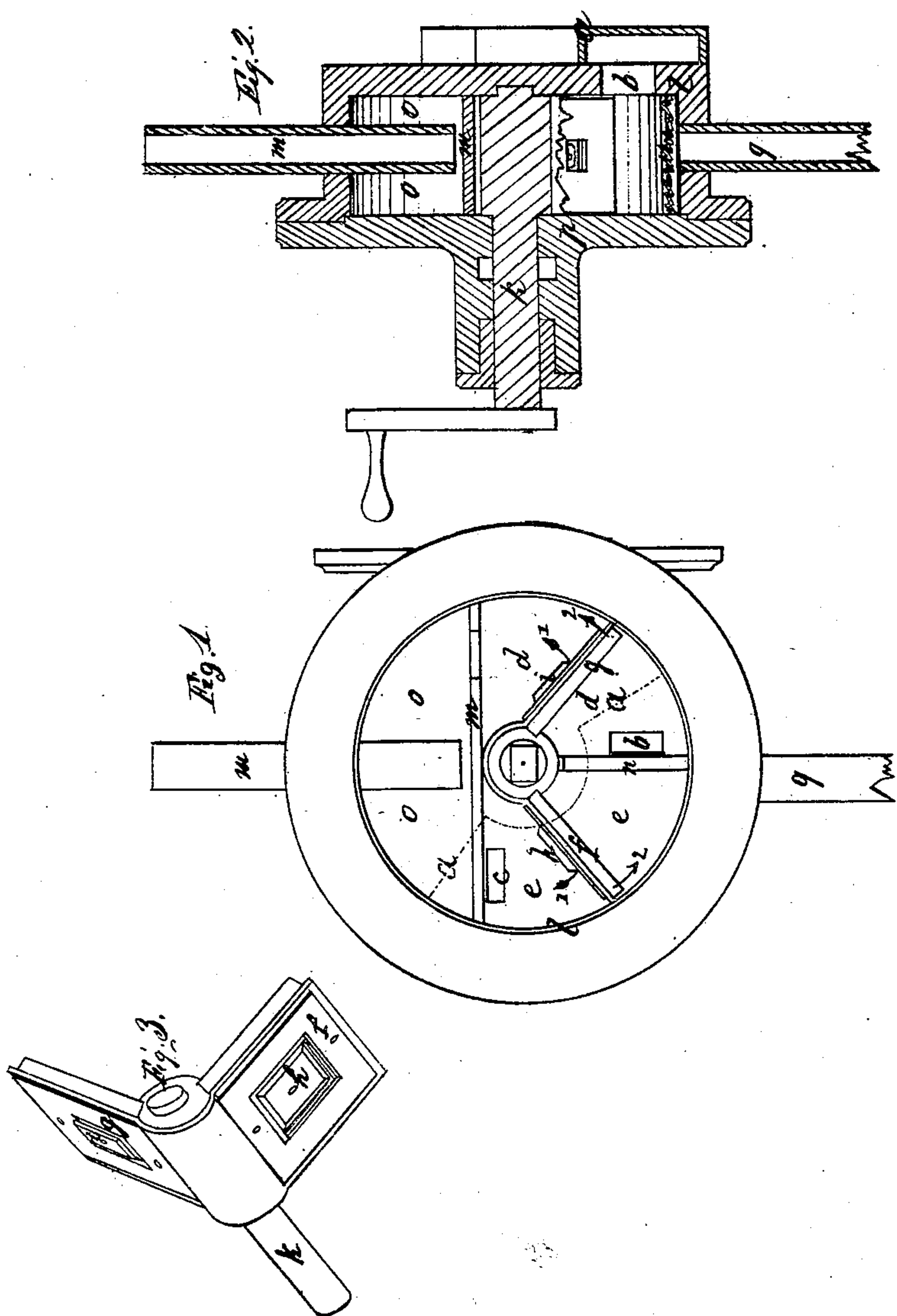


E. Garrette,
Oscillating Pump,
No 13,643,
Patented Oct. 9, 1855.



UNITED STATES PATENT OFFICE.

ELLWOOD GARRETTE, OF WILMINGTON, DELAWARE.

VIBRATING PUMP.

Specification of Letters Patent No. 13,643, dated October 9, 1855.

To all whom it may concern:

Be it known that I, ELLWOOD GARRETTE, of Wilmington, in the State of Delaware, have invented an Improvement in Vibratory Pumps, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the annexed drawings, of which—

Figure 1 represents a side view with the disk *p* removed and showing the interior works; Fig. 2 a vertical middle section taken through dotted line *x—x*; Fig. 3, a detached perspective of the pistons.

My invention consists in a peculiar arrangement and construction of parts of a vibratory pump so as to produce a constant stream of water and dispense with the use of a valve in the supply pipe as herein set forth.

A cylindrical box *l* which is covered by a disk *p* is divided into three compartments *o*, *e* and *d* by means of divisions *m* and *n*. The two compartments *e* and *d* communicate with each other by means of a side passage *a* which opens into the compartment *e* at *c* and into the compartment *d* at *b*. The opening *c* is in front of the acting side of the piston wing *f* *h* and close to the partition *m*. The opening *b* is in rear of the acting side of the piston wing *i* *g* and close to the partition *n*. The induction pipe *g* enters into compartment *e* in rear of the acting side of piston wing *f*, *h*, and close to partition *n*. The compartments *d* and *o* communicate by means of an opening in partition *m*, and the compartment *o* terminates into eduction pipe *m*. Supposing the two winged pistons *f*, *h*, *g*, *i* to be in such a position that wing *f*, *h* is close to *m* and wing *g* *i* close to *n*, as soon as axle *k* is turned so as to move the wings in the direction of arrows 2 the motion of wing *g* *i* will commence to create a vacuum in that part of compartment *d* which is in rear of the wing and compartment *e* on account of the communication *b*, *a*, *c* between said parts of the two compartments. The water from induction pipe *g* will enter the side passage and (through opening *b* *c*)

it will fill the compartments *d* in the same manner as the piston wing recedes from the opening *b* and it will fill the compartment *e* on both sides of wing *f* as the wing valve *h* will be free to open in the direction of arrow 1. When the wings have finished their quarter revolution and commence their return motion, the resistance of the water will close the wing valve *h* and the wing *f* in its motion toward *c* will force the water (the communication of which with the induction pipe is cut off as soon as wing *f* in its return motion has passed the induction entrance) through *c*, *a*, *b* and through wing valve *i* (now opening in direction of arrow 1). By the time the wings have returned to their original position the water (previously contained in compartment *e* and *d*) will have filled the compartments *d* and *o*. When the wings now perform their second stroke in the direction of arrows 2 the wing *g* will lift the water contained in compartment *d* and *o* and by the time the second quarter revolution in the direction of arrows 2 has been completed a quantity of water will have been forced up through the eduction pipe *m* equal to the capacity of compartment *d*. At the same time the compartments *e* and *d* have filled with water in rear of the motion of the wings as above described, and during the return motion of the second stroke (opposite to arrows 2) the water will be forced in front of the wing *f* through *c*, *a*, *b* and valve *i* into eduction pipe *m*. Thus this pump is made double acting by means of two valves *h* and *i*.

What I claim as my invention and improvement in vibrating double acting pumps is,

The arrangement of the side passage (*a*) with its openings (*b*), (*c*), into chambers (*e*), (*d*), respectively, in combination with the vibrating pistons (*f*), (*g*), having their valves (*h*), (*i*), opening upward, or in the direction of the outlet of the water, in the manner and for the purposes set forth.

ELLWOOD GARRETTE.

Witnesses:

JNO. GORGAS,
ALBERT W. SMITH.