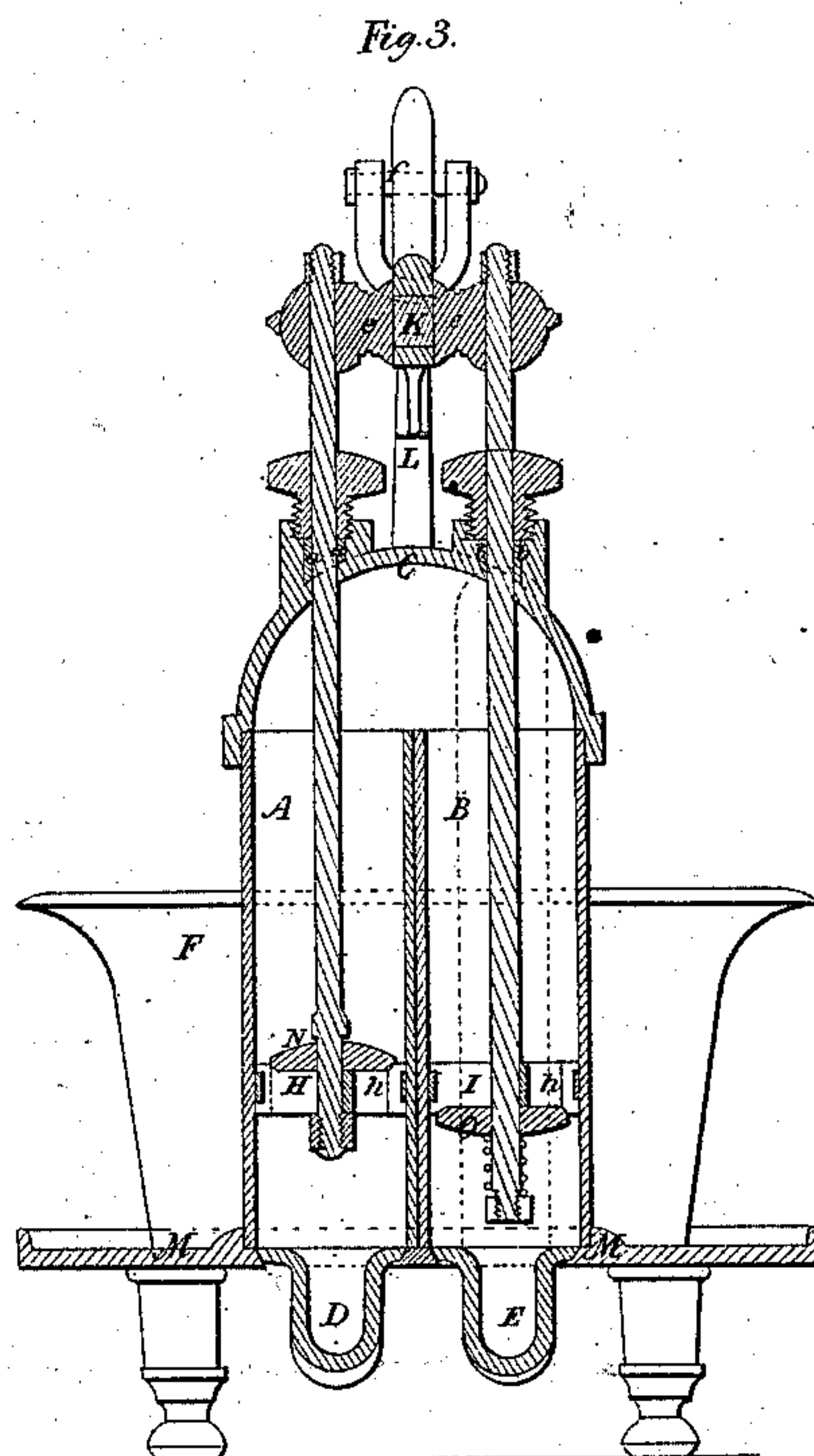
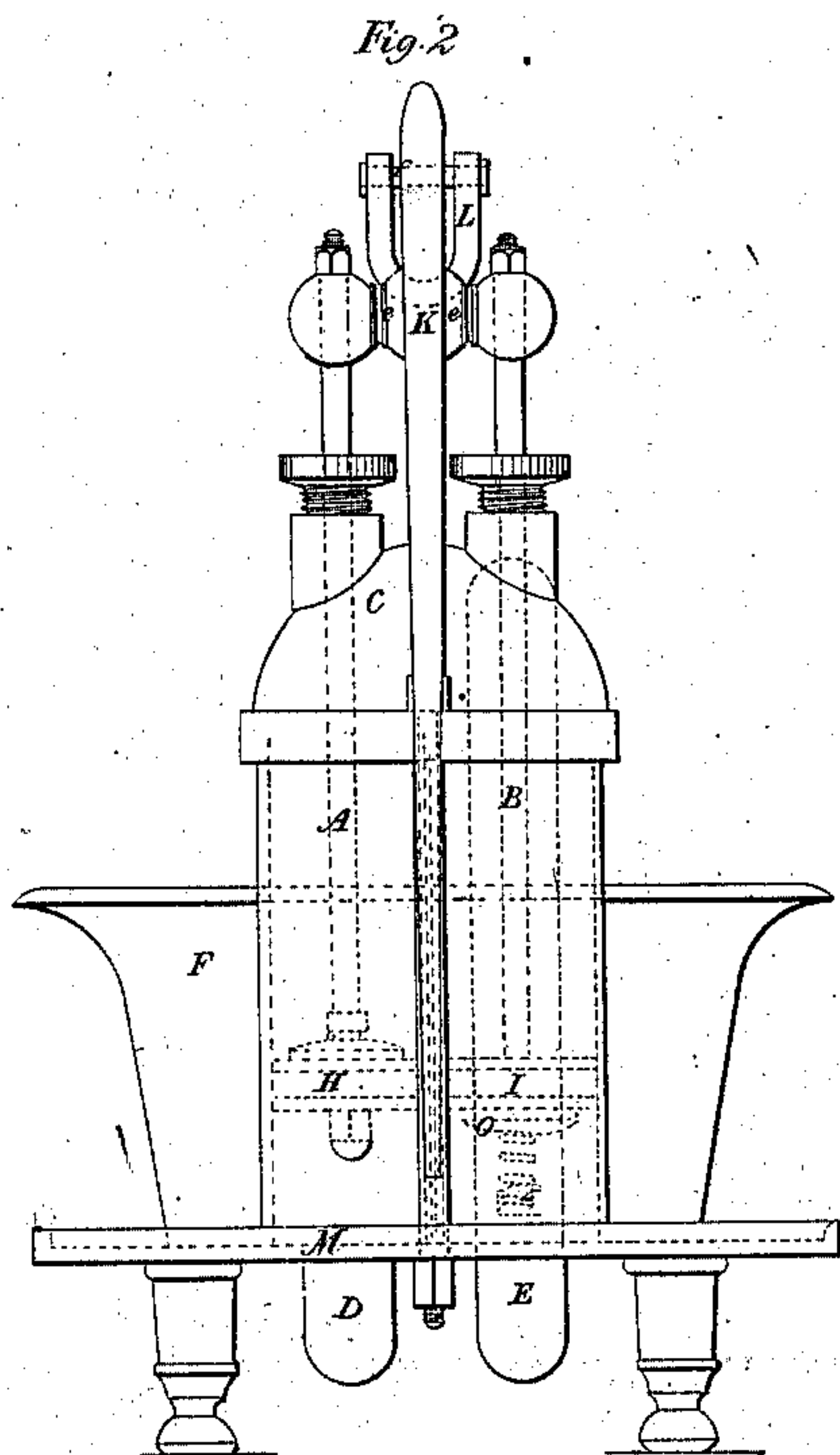
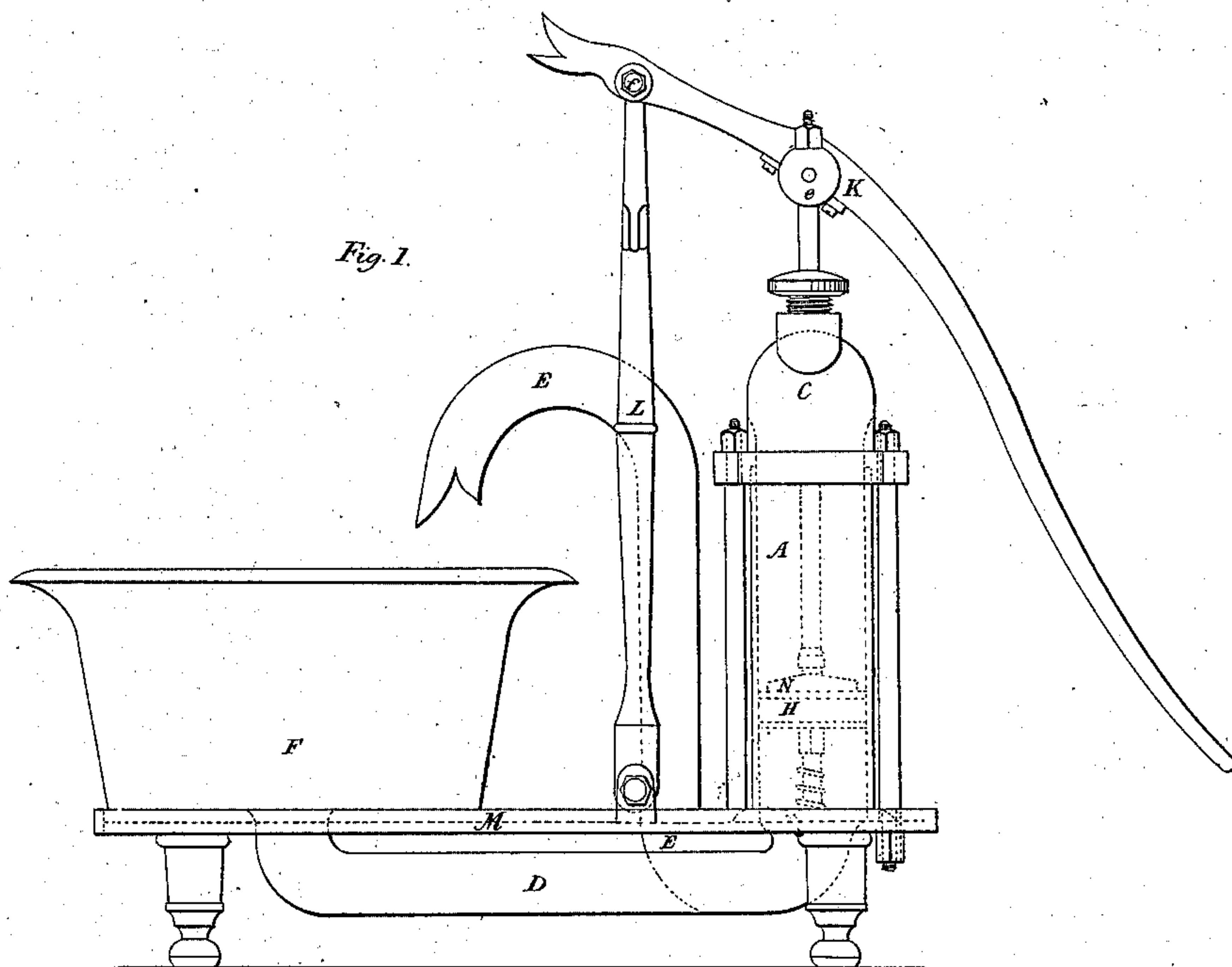


W. T. Vose.

Double-Acting Pump.

N^o 12,566.

Patented Mar. 20, 1855.



UNITED STATES PATENT OFFICE.

WILLIAM T. VOSE, OF NEWTONVILLE, MASSACHUSETTS.

PUMP.

Specification of Letters Patent No. 12,566, dated March 20, 1855.

To all whom it may concern:

Be it known that I, WILLIAM T. VOSE, of Newtonville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Pumps for Elevating Fluids; and I do hereby declare the same to be fully described in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of said drawings Figure 1 denotes a side view of one of my improved double pumps. Fig. 2, is a rear elevation of the same. Fig. 3, is a transverse and vertical section of it, the same being taken through both its barrels and pistons, the said pump for the sake of illustrating its induction and eduction pipes, being shown as applied to a reservoir for containing a fluid.

The nature of my invention consists in a peculiar manner of connecting two pump barrels, and arranging their induction and eduction pipes or passages and the valves of their respective pistons whereby two valves in or on the pistons are all that is necessary to the elevation of water by means of two pump barrels.

For the purpose of carrying out my invention two pump barrels A, and B, are employed, they being arranged side by side and so connected together at two of their adjacent ends by an arched pipe, C, that there may be a free communication between the bores of both. Each of the other two ends of the said barrels is provided with a pipe (D, or, E,) leading from it, one of such pipes being the induction and the other the eduction pipe.

In the drawings, the induction pipe is seen as leading from the lower part of the reservoir, F, to the lower end of the pump barrel, A, while the eduction pipe is represented as passing from the lower end of the pump barrel, B, and bent upward and made to open and terminate over the reservoir, so as to discharge directly into it. Each of the barrels, A, B, is provided with a piston, H, or, I, the rods of which respectively play through two stuffing boxes, *a*, *b*, arranged in the connection pipe, C. These rods are connected together by a cross bar or head, *e*, which is jointed to a brake or pump handle, K, whose fulcrum, *f*, is at the top of a movable or vibratory rod or standard, L, which at its foot is jointed to the base plate, M, by which the pump barrels and their reservoir are sup-

ported. Each piston is provided with one or more passages, *h*, leading through it, and each provided with a valve as seen at N, or, O, the valve of one piston being placed on one side or the top of it, while that of the other piston is disposed on the other side or the bottom of it as seen in Fig. 3. This arrangement of the valves with respect to their pistons constitutes an important feature of my invention.

A pump being so constructed, the two pistons are moved simultaneously in the same direction when the brake is in operation. While the two pistons are being either raised or depressed the valve of one will be closed and that of the other opened. When they are raised, the valve of that belonging to the barrel, A, is closed, and the air or fluid over the two pistons will be drawn down through that of the barrel, B, water or fluid at the same time always passing up into the barrel, A, or space below its piston. During the descent of the piston the space over them and in the barrels will be increased so as to cause the valve of the piston of the barrel, A, to open, and the water to flow or be drawn into such space, the water that was in the other barrel and below its piston being drawn out thereof and through the induction pipe. Thus at each upward or downward stroke of the piston, the water or fluid will be elevated by atmospheric pressure and forced out of the pump by pressure of one of the pistons.

In this pump, only two valves or sets of valves, are necessary, while in most if not all other pumps, which have two barrels and two pistons, four valves or sets of valves are necessary. A great reduction of friction in the passage of the fluid through the valve openings compared with what occurs in other pumps, as above mentioned, naturally results the same not only reducing the power required to operate the pistons, but also contributing to increase the flow and delivery of the fluid or the amount of it elevated.

The simplicity of my improved pump is also another advantage it possesses. As it has but two sets of valves it is not liable to get out of order as it would be had it four sets.

What I claim consists in connecting the two pump barrels at two adjacent ends as described, in combination with not only arranging the valves of their respective pistons

so that one of them shall be applied to one
or the upper side of one piston, while the
other is applied to the opposite or lower
side of the other piston as stated, but ap-
5 plying the eduction and induction pipes re-
spectively to the disconnected ends of the
barrels substantially as hereinbefore spec-
ified.

In testimony whereof I have hereunto set
my signature this fifth day of January, 10
A. D. 1855.

WILLIAM T. VOSE.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.