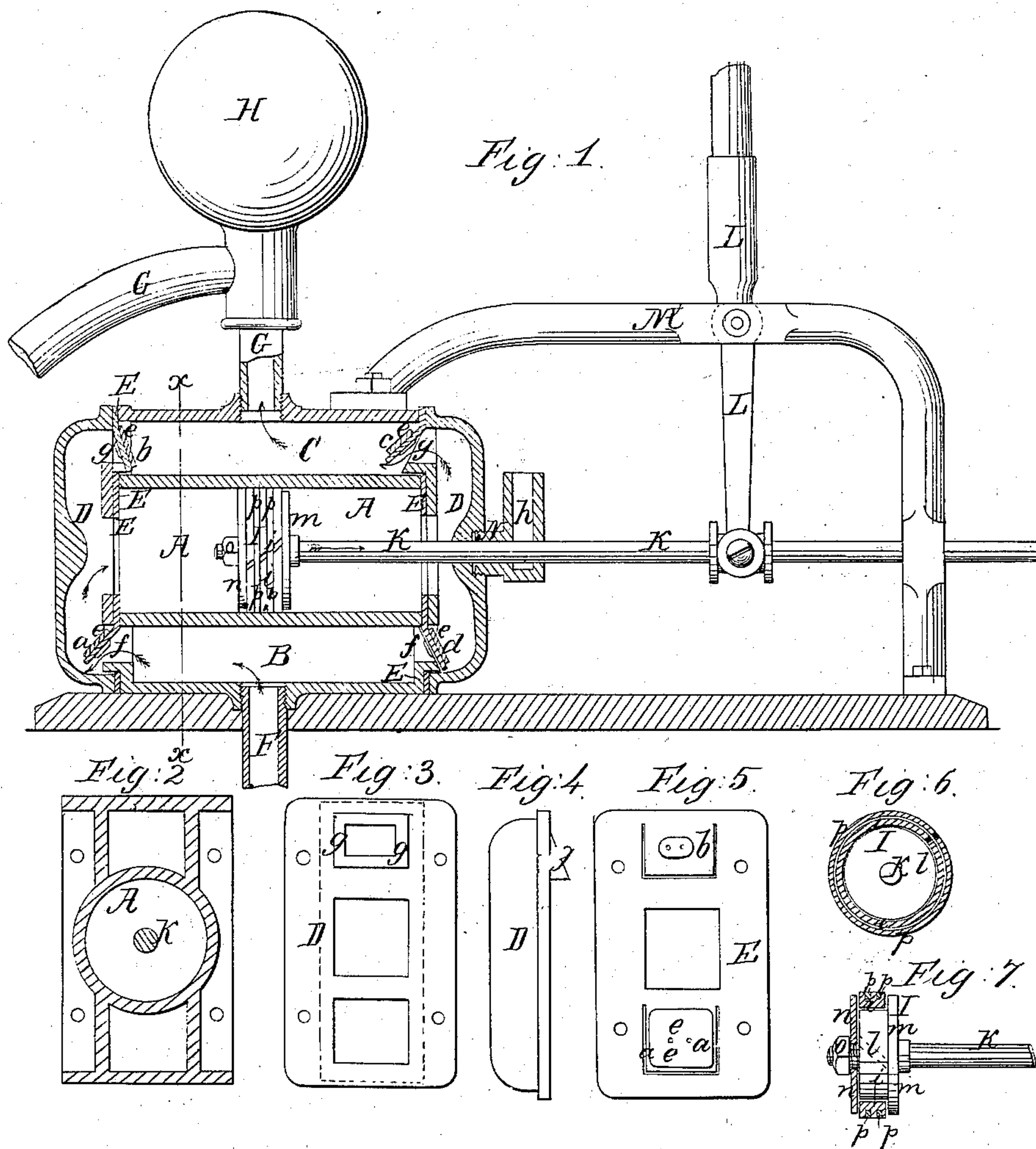


C. VERNIAND & D. J. LUCIE.
PUMP.

No. 68,014.

Patented Aug. 20, 1867.



Witnesses;
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C. VERNIAUD AND D. J. LUCIE, OF QUINCY, ILLINOIS.

Letters Patent No. 68,014, dated August 20, 1867

IMPROVEMENT IN PUMPS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, C. VERNIAUD and D. J. LUCIE, of Quincy, in the county of Adams, and State of Illinois, have invented a new and improved Pump; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to certain improvements in the construction of pumps, whereby the same are made simpler and operate better than the pumps now in general use. In the annexed drawings our invention is illustrated—

Figure 1 being a longitudinal vertical section of our improved pump.

Figure 2 is a vertical cross-section of the same, taken on the line *x x*, fig. 1.

Figure 3 is an inside face view of one of the cylinder-heads.

Figure 4 is a detached side view of the same.

Figure 5 is a face view of the packing between the cylinder and cylinder-head.

Figure 6 is a vertical cross-section of the piston.

Figure 7 is a vertical longitudinal section of the same.

Similar letters of reference indicate like parts.

A is a horizontal cylinder, open at both ends, and provided with chambers B and C at its top and bottom respectively, said chambers being also open at both ends. D D are the cylinder-heads, which are provided with holes at the ends of the chambers A, B, and C, establishing communication between the same. Between the ends of cylinder and the heads are placed India-rubber plates or packings E, which are perforated at the ends of the cylinder A, and which are cut, at the ends of the chambers B and C, so as to leave four valves *a, b, c*, and *d*, as shown in fig. 1. These valves are part of the rubber plates E, their lower and side edges being cut out, while their upper edge is not cut, and acts as a hinge for the valve to swing on, as shown in fig. 5. The valves are weighted by metal plates *e e*, which are attached to the inside of the suction-valves *a* and *d*, and to the outside of the discharge-valves *b* and *c*, as shown. F is the supply pipe connecting with the chamber B, and G is the discharge pipe connecting with the chamber C, as shown in fig. 1. H is an air-chamber, attached to and connecting with the discharge pipe, as shown. For the suction-valves *a* and *d* are provided seats *f* in the form of projecting tapering flanges, which are part of the cylinder, and for the valves *b* and *c* similar seats *g* are arranged on the heads D, as shown in figs. 1, 3, and 4. I is the piston attached to a piston-rod, K, which is operated by an oscillating lever, L, pivoted to a stationary horizontal beam, M, or by any other suitable device. The rod K passes through packing N, on which a lubricating device, *h*, is arranged, as shown. The piston is formed of a metal ring, *i*, placed upon a solid collar, *l*, on the rod, and held between two flanges *m* and *n*, of which the latter is held in place by a nut, *o*, as shown in figs. 1 and 7. The ring *i* is cut obliquely, as shown, so as to form a spring. It is provided with two (more or less) grooves around its rim, into which leather or other flexible rings *p* are placed, said rings *p* being, by means of the spring *i*, pressed close against the inner surface of the cylinder, whereby a water-tight packing is effected.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The cylinder-heads D, constructed as described, provided with the projecting inclined flange *g* upon their upper sides, fitting over the upper side of the cylinder A, the latter provided with corresponding inclined projecting flange *f* upon its lower side, fitting into the lower part of the heads D, all arranged as described, whereby the said heads D are prevented from having any vertical movement independently of the cylinder, as herein shown and described.

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Witnesses:

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