J. S. Patric,

Pump Packing,

No. 54,399. Patented May 1, 1866.

Fig: 1.

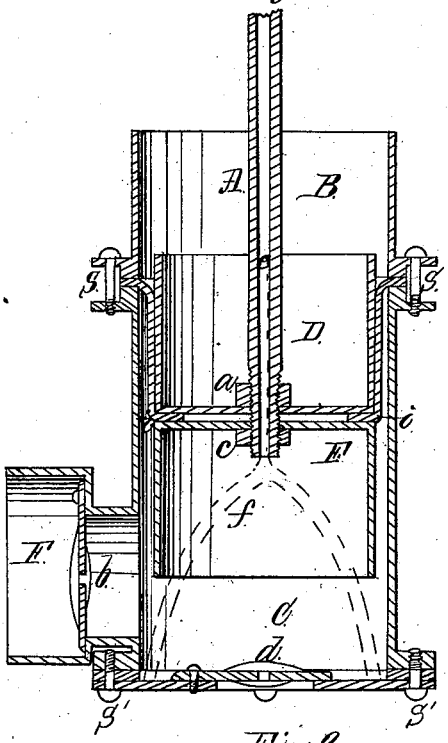
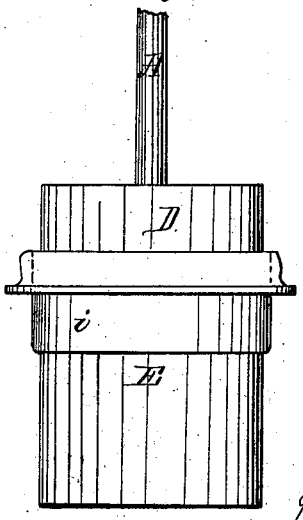


Fig: 2.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

JOHN S. PATRIC, OF VICTOR, NEW YORK.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **54,399**, dated May 1, 1866.

To all whom it may concern:

Be it known that I, J. S. PATRIC, of Victor, in the county of Ontario and State of New York, have invented certain new and useful Improvements in the Packing of Water, Gas, and other Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section of my invention. Fig. 2 is a side elevation of the piston-head, with its flexible packing *i* represented as partially folded down, as when the piston is at half-stroke, for instance.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a peculiar construction of the piston-head and packing of engines for air or water, and for other purposes. It will be better understood by reference to the drawings and specification.

To enable others to make and use my invention, I will describe its construction and operation.

To the cylinder C of an ordinary single-acting water or air engine I add an auxiliary cylinder or relieving section, B. The piston-head is formed of two cylindrical cups, D and E, fixed to the piston-rod A, with their closed ends together. The packing *i* consists of a tubular sack, of leather or other suitable material. The piston-head should be enough smaller than the inner bore of the cylinder to receive two thicknesses of the packing in the annular space and permit the doubling or folding to be effected with freedom. One end of the packing-sack *i* is crimped, so as to be clamped between the cups D and E, and the other end is stretched, so as to be clamped between the cylinders C and B, as seen in Fig. 1.

The piston-rod A may be made hollow, and a bridge, as shown at *f*, attached to the head of the cylinder, and made to terminate in a steady-pin or guide extending into the hollow piston-rod A, as indicated by the dotted lines at *e*. The object of this device would be to secure a central action of the piston-head when used in a single-acting engine, as here represented.

It will be seen that the packing-sack *i* is kept in proper position and greatly relieved from pressure by means of the cups D and E and section B, for which object they are especially designed.

The valves *b* and *d* render the engine, as represented in Fig. 1, capable of compressing air and pumping water or other fluids; but if compressed air or if water is to be used to drive this engine the valves should be arranged and operated to suit such circumstances.

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

The cups D E, one or both, in the formation of the piston-head, constructed and arranged with the envelope *i*, and operated substantially in the manner and for the purposes set forth.

JOHN S. PATRIC.

Witnesses:

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