

J. H. PARKINSON.
Air-Compressor.

No. 225,161.

Patented Mar. 2, 1880.

Fig. 1.

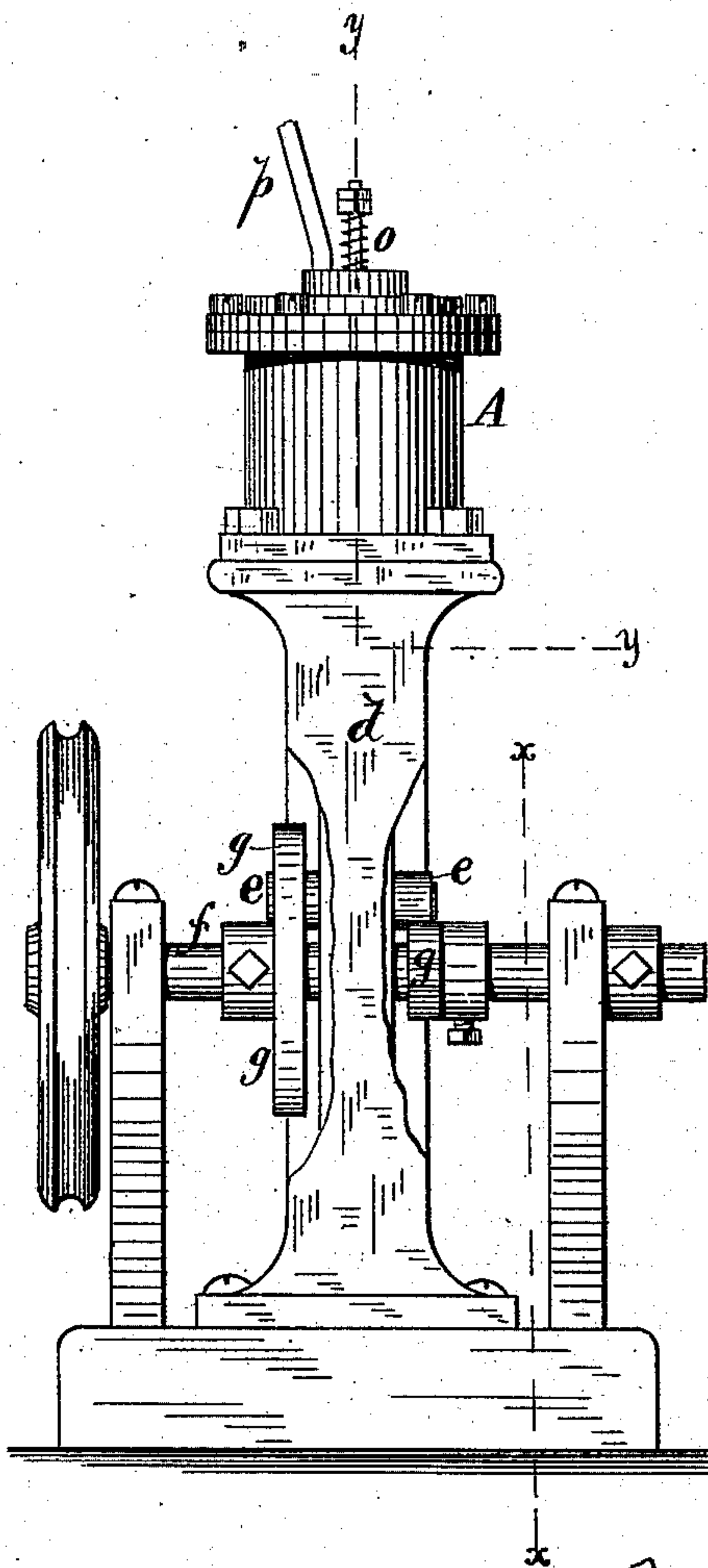


Fig. 2.

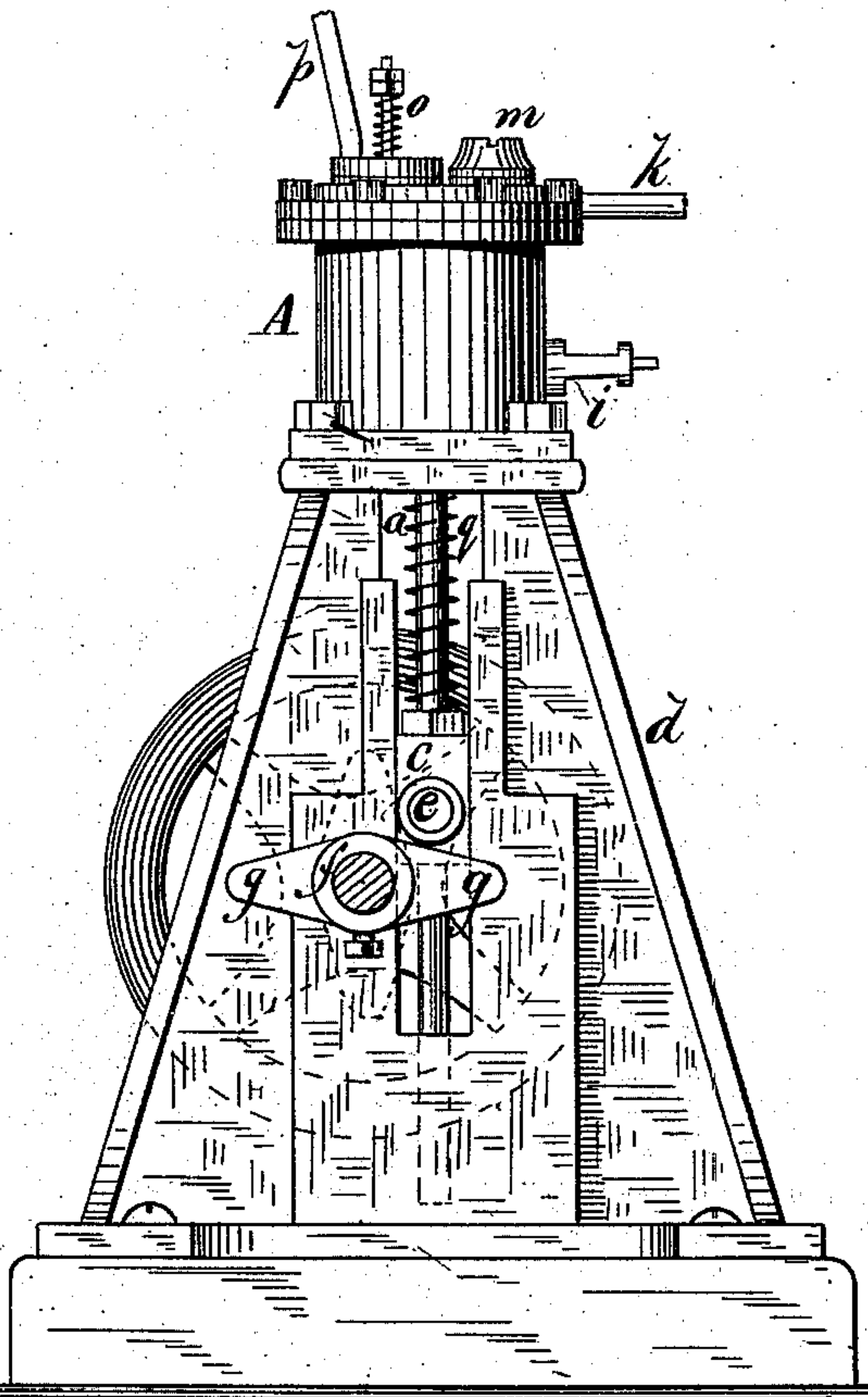
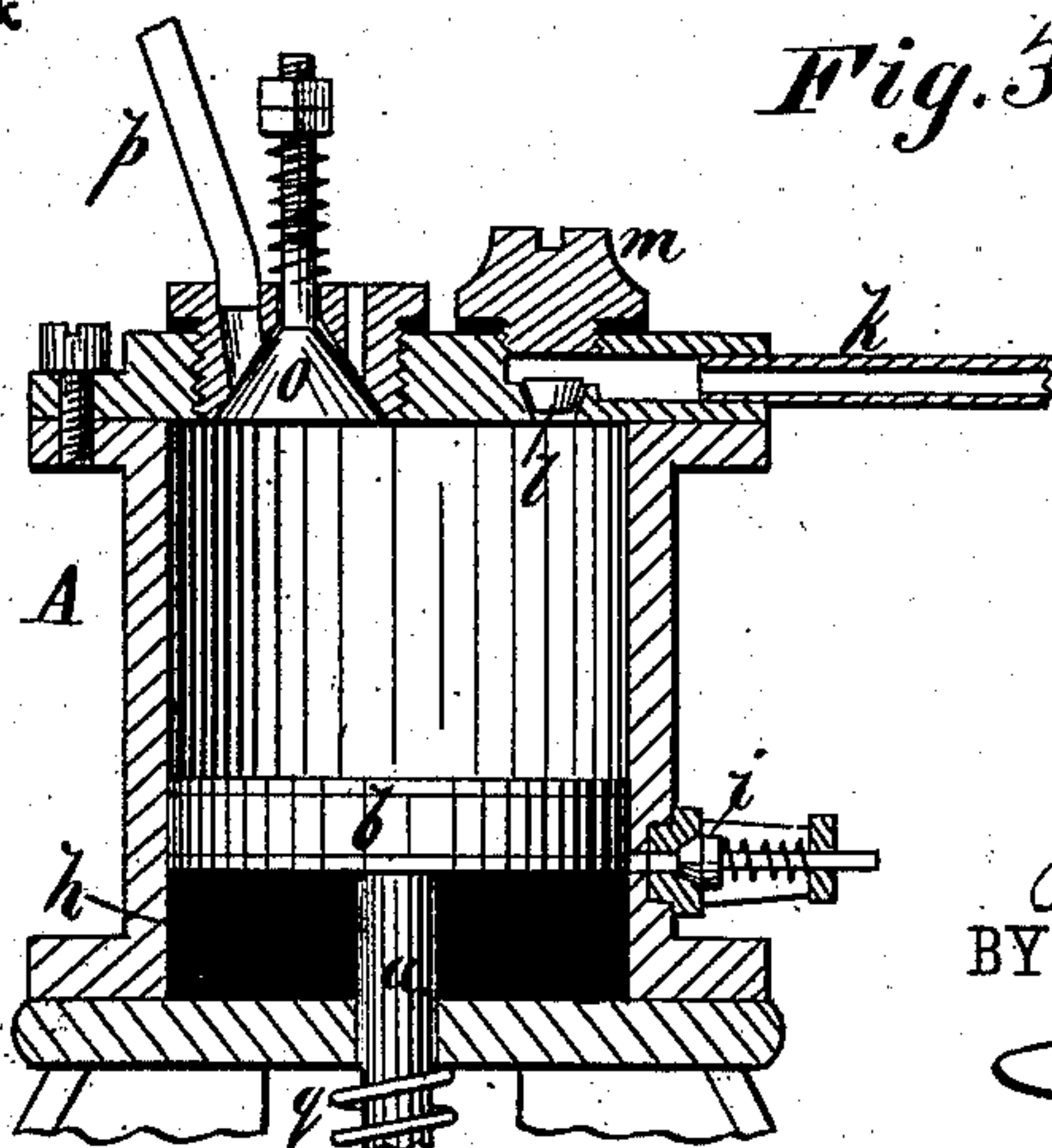


Fig. 3.



WITNESSES:

Henry N. Miller
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INVENTOR:

J. H. Parkinson
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN H. PARKINSON, OF VIRGINIA CITY, NEVADA, ASSIGNOR OF ONE-THIRD
OF HIS RIGHT TO FRANK HINDS, OF SAME PLACE.

AIR-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 225,161, dated March 2, 1880.

Application filed July 8, 1879.

To all whom it may concern:

Be it known that I, JOHN H. PARKINSON, of Virginia City, in the county of Storey and State of Nevada, have invented a new and Improved Air-Compressor, of which the following is a specification.

My improvements relate to air-compressors especially adapted for use at mines; and the object of the invention is to construct a simple and durable apparatus, which will occupy but small space and require but little power to drive it.

The invention consists in combining a cylinder having three valves, a piston, a head, a slide, a rotary shaft, and cams, as hereinafter described.

In the accompanying drawings, Figure 1 is a front view of the compressor. Fig. 2 is a side view. Fig. 3 is a vertical section through the cylinder.

Similar letters of reference indicate corresponding parts.

A is a vertical cylinder, fitted with a piston, *a*, and head *b*. The piston *a* passes through the lower head of the cylinder, and is fitted with a cross-head, C, that moves in a slideway formed in the supporting-frame *d*. Upon opposite sides of the head C are bosses or projections carrying friction-rollers *e*.

f is a horizontal shaft, driven by power and fitted with four cams, *g*, more or less, that are arranged equidistant around the shaft and two at each side of the cross-head, whereby they act to raise the piston *a* alternately.

In the bottom of cylinder A is fitted an elastic cushion, *h*, that relieves the shock of the piston-head as it falls. In the side of the cylinder just above the cushion is an opening fitted at the outside with an outwardly-opening spring-valve, *i*, which permits the air to be driven out from beneath the piston, and the piston is to be fitted air-tight, so that as it rises a vacuum will be formed beneath the head *b*.

In the upper head of the cylinder is an open-

ing communicating by a pipe, *k*, with the receiver, (not shown,) which opening is closed by a disk-valve, *l*. This valve *l* is within a recess formed in the cylinder-head, to which recess the pipe *k* connects, and above the valve is an opening, that is closed by a screw-plug, *m*, whereby, to obtain access to the valve to renew it, it is only necessary to remove the plug *m*. The head is also fitted with spring inlet-valve *o*, which is of conical form, and is seated in a perforated nut that is tapped into the cylinder-head. One of the inlet-openings is fitted with a pipe, *p*, by which water enters the cylinder for cooling it.

In operation, as the piston is raised by the cams, the air is forced out through the pipe *k*, and a vacuum formed beneath the head. As soon as the piston is released it is caused to drop quickly by the pressure caused by the vacuum, the valve *o* opening to admit the air, and at the same time a jet of water enters from the pipe *p*, which jet strikes the conical surface of the valve, and is thereby spread over the entire inner surface of the cylinder. A spiral spring may be applied around the piston, as at *q*, to aid the fall of the piston.

This compressor is simple, durable, and compact. It saves the expense and space required by air-compressors as heretofore constructed, as well as the time usually occupied in changing the valve. The only inner valve is in the outlet, and that is readily accessible.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The improved air-compressor, consisting of the cylinder A, fitted with valves *i l o*, the piston *a*, head *b*, slide C, rotating shaft *f*, and cams *g*, combined for operation substantially as described and shown.

JOHN HENRY PARKINSON.

Witnesses:

W. J. MOSS,

R. B. MITCHELL.