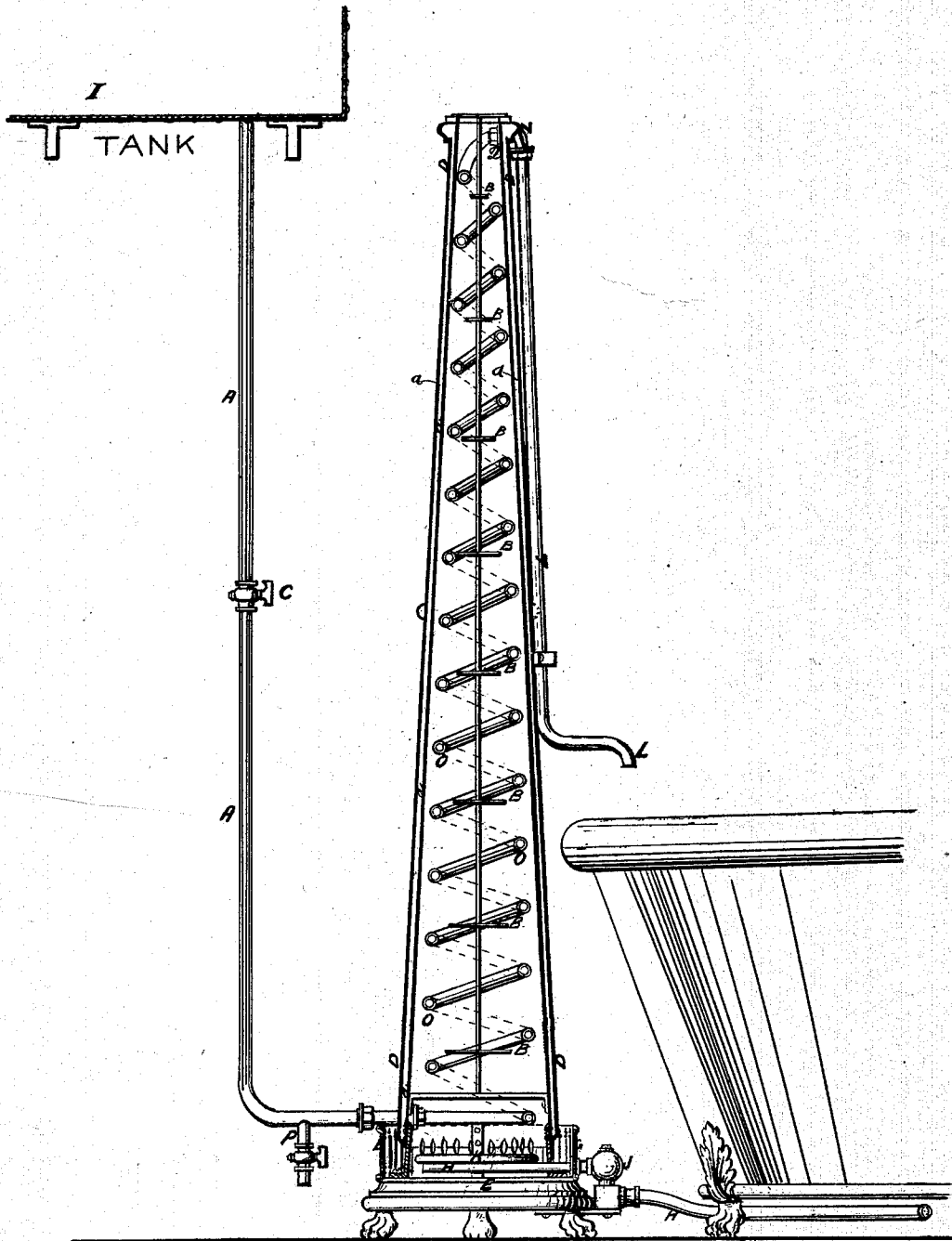


J. McKENZIE.
Gas-Stoves.

No. 146,352.

Patented Jan. 13, 1874.



Witnesses,
Alexander Dew.
A. H. Byers.

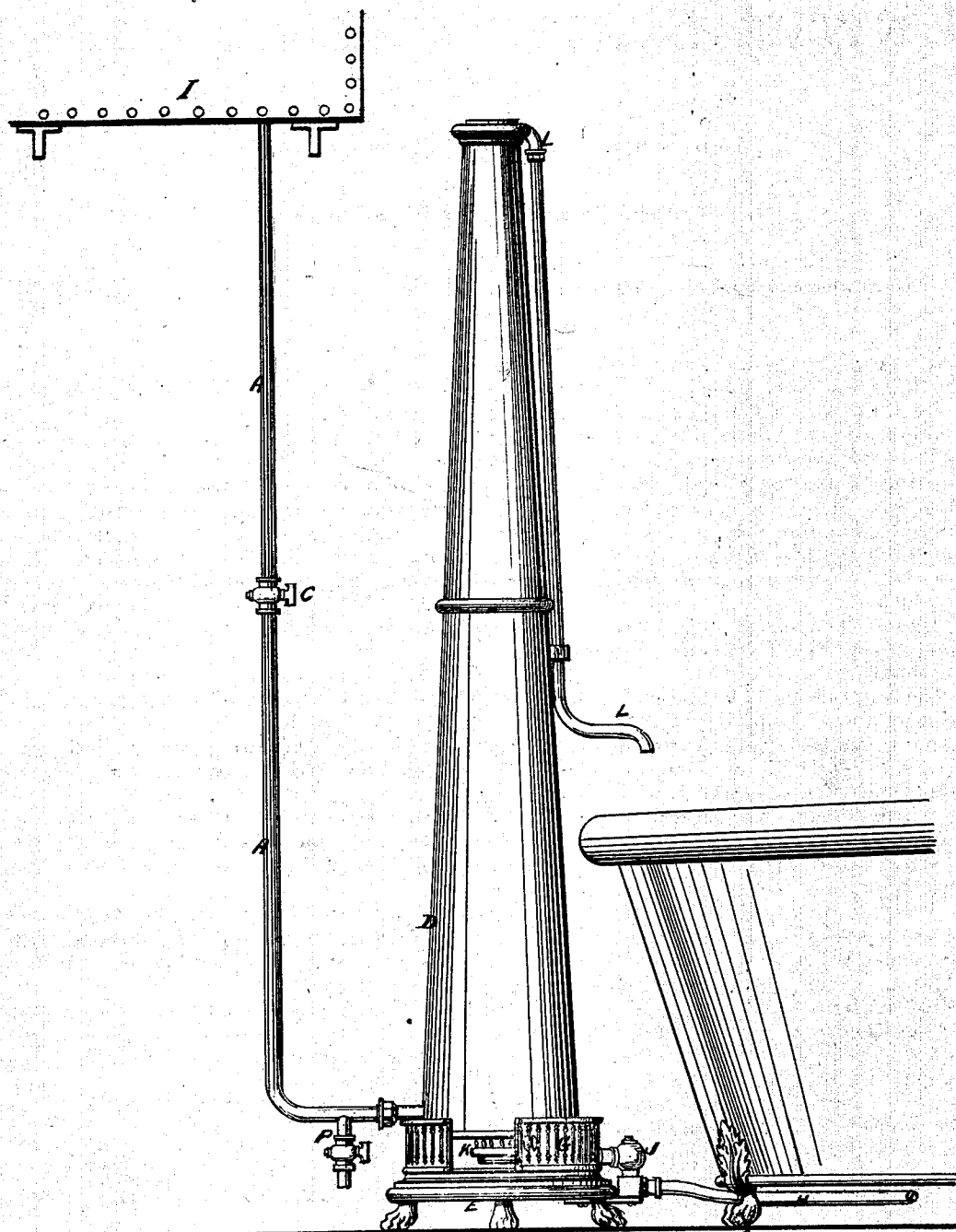
SECTION.
FIG. 1

Inventor.
James M. McKenzie
per John G. Gurnea
Attorney

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ELEVATION
FIG 2.

Inventor
James H. McKenzie
per John G. W. H. Attorney

UNITED STATES PATENT OFFICE.

JAMES MCKENZIE, OF LONDON, ENGLAND.

IMPROVEMENT IN GAS-STOVES.

Specification forming part of Letters Patent No. **146,352**, dated January 13, 1874; application filed October 8, 1873.

To all whom it may concern:

Be it known that I, JAMES MCKENZIE, of London, England, have invented certain new and useful Improvements in Apparatus for Heating Water for Portable Bath and other purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a vertical section of the heating apparatus. Fig. 2 is a full external view of the same.

The water-cistern I is placed in any suitable position above the level of the heater, and the water drawn therefrom by the pipe A, the supply being regulated by the stop-cock C. The pipe A terminates in the duplex conical tube D, which is made of sheet-iron, and has a thin sheet of water between the plates of the same, as shown at *a a*, Fig. 1. The conical tube D rests in a frame of cast and wrought iron, E, in the side of which is a door, G, through which passes the gas-pipe H, both of which are suspended or work on the swivel J, through which the gas passes to the jet-pipe K, where, being ignited, combustion takes place for heating the water in the conical tube D and coil O. To the top of the tube D is connected the pipe L, from the lower end of which the heated water escapes into the bath-tub. In the interior of tube D may be suspended at several points on a wire leading from the top pieces of sheet-iron B, to deflect the heated gases or product of combustion to the surface

of the inner case, which also has the effect of preventing the too rapid escape of the heat. In the interior of the tube D is a coil of pipe, O, connected by means of union joints with the interior of the duplex conical tube D at the points Q Q, being immediately opposite to the inlet-pipe A and the outlet-pipe L, by which combination an economy of gas is obtained, and the water more quickly heated.

The advantage of having the door open and carrying the gas-jets out to be lighted is, that it fully prevents the disagreeable explosions which invariably take place in all gas-stoves when the gas is turned on and the burners are lighted on the inside.

The apparatus when not in use may be emptied of the water by means of exhaust-pipe and stop-cock P.

Having thus described my invention, its mode of construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In combination with the conical tube D and coil O, the gas-pipe H, furnished with the jets K, arranged as described, and for the purpose set forth.

2. The combination of the pipe H and the door G, both arranged to swing on the swivel J, in the manner described, and for the purpose set forth.

JAMES MCKENZIE. [L. S.]

Witnesses:

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