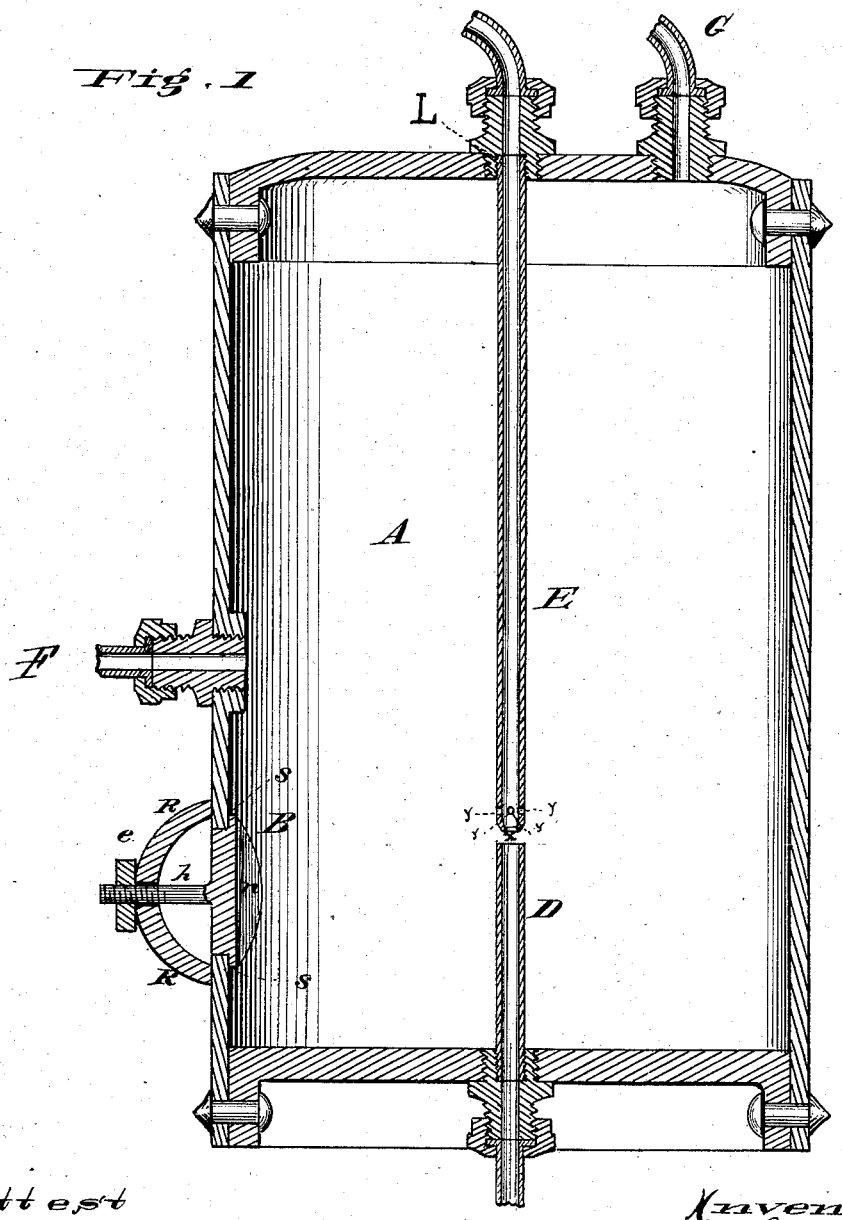
# J. LAWTON & J. A. GIBSON.

## Upright Boiler for Ranges, Stoves, &c.

No. 165,105. Patented June 29, 1875.

Fig. 1




Attest

D. B. Kennedy.

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Inventors.

James Lawton and

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his atty in fact.

# UNITED STATES PATENT OFFICE.

JAMES LAWTON AND JAMES A. GIBSON, OF CINCINNATI, OHIO.

## IMPROVEMENT IN UPRIGHT BOILERS FOR RANGES, STOVES, &c.

Specification forming part of Letters Patent No. **165,105**, dated June 29, 1875; application filed August 14, 1874.

*To all whom it may concern:*

Be it known that we, JAMES LAWTON and JAMES A. GIBSON, of the city of Cincinnati and State of Ohio, have invented certain new and useful Improvements in Upright Boilers for Ranges, Stoves, &c., of which the following is a specification:

Our improvements pertain to upright boilers for ranges, stoves, &c.

Where water is used containing mud or other impurities there is great necessity of frequent cleaning, for the reason that a portion of the impurities will lodge in the bottom of the boiler, and a part will pass into the heater-pipe and be carried to the heater, filling it up, and causing it to burn out. Where hard water is used the lime or other minerals form in scales, oftentimes covering the orifice of the heater-pipe, and preventing the egress of water from the boiler to the heater.

We obviate these difficulties by the elongation of the pipe conveying the water into the heater out of the boiler, and also by placing the inlet-pipe directly over the heater-pipe, so that there may be a steady flow of water into the heater, and back to the boiler without interruption.

In the accompanying drawing, the figure represents a vertical section of the boiler, taken through the center of the pipes connected therewith.

A represents an upright boiler of the usual form for ranges, stoves, &c. B is a hand-hole, closed by means of a flanged plate, *n*, through which access can be had to the inside of the boiler when cleaning is necessary. D is the heater-pipe, entering at the bottom of the boiler, and leading to the heater in the stove or range. This pipe rises in the bottom of the boiler, almost touching the bottom end of the feed-pipe. E is the inlet or feed pipe, entering at the top of the boiler, and coming down nearly to the heater-pipe D. It is perforated in the lower end at *x x x x* with small holes, and with large orifice at X. F is the return-pipe, entering in the side of the boiler. This is the pipe which returns the water from the heater into the boiler. G is the effluent pipe, which enters at the top of the boiler, and through which water can be carried to any desired part of the house.

The mode in which our improved boiler operates is as follows: The boiler is first filled with water entering through the feed-pipe E. After the boiler has been filled, whenever water is drawn off through effluent pipe G, a new supply of water enters the boiler through pipe E. A portion of this water enters the boiler through the perforations in the sides of the orifice of pipe E, and issues forth in spray, causing a churning motion in the water in the boiler, thus preventing incrustations of mud and other impurities from being formed on the sides of the boiler. The main portion of the water passes through the large orifice in the lower end of the pipe E, and spouts directly into the mouth of pipe D, thereby, even though there be no fire in the stove, causing the water in the latter pipe to flow through the heater, and return to the boiler through the return pipe F, thus keeping the heater free from settlings and impurities which would otherwise accumulate when there was no fire in the stove, and consequently no circulation of water through the heater, caused by the heating of the same.

Pipe D, coming up higher in the boiler than pipes of this description have heretofore done, is above any mud which may collect in the bottom of the boiler, thereby preventing any deposits from entering pipe D and stopping it up, or the heater, to which it is connected. All danger, therefore, of explosion or burning out of the coil in the heater is obviated, and the disagreeable rattling noise caused by the stoppage of the pipe.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, in an upright boiler, of feed-pipe E and heater-pipe D, the pipe E being placed directly over pipe D, as for the purposes set forth.

JAMES LAWTON.
JAMES A. GIBSON.

In presence of—
D. P. KENNEDY,
R. J. GARRETTÉ.