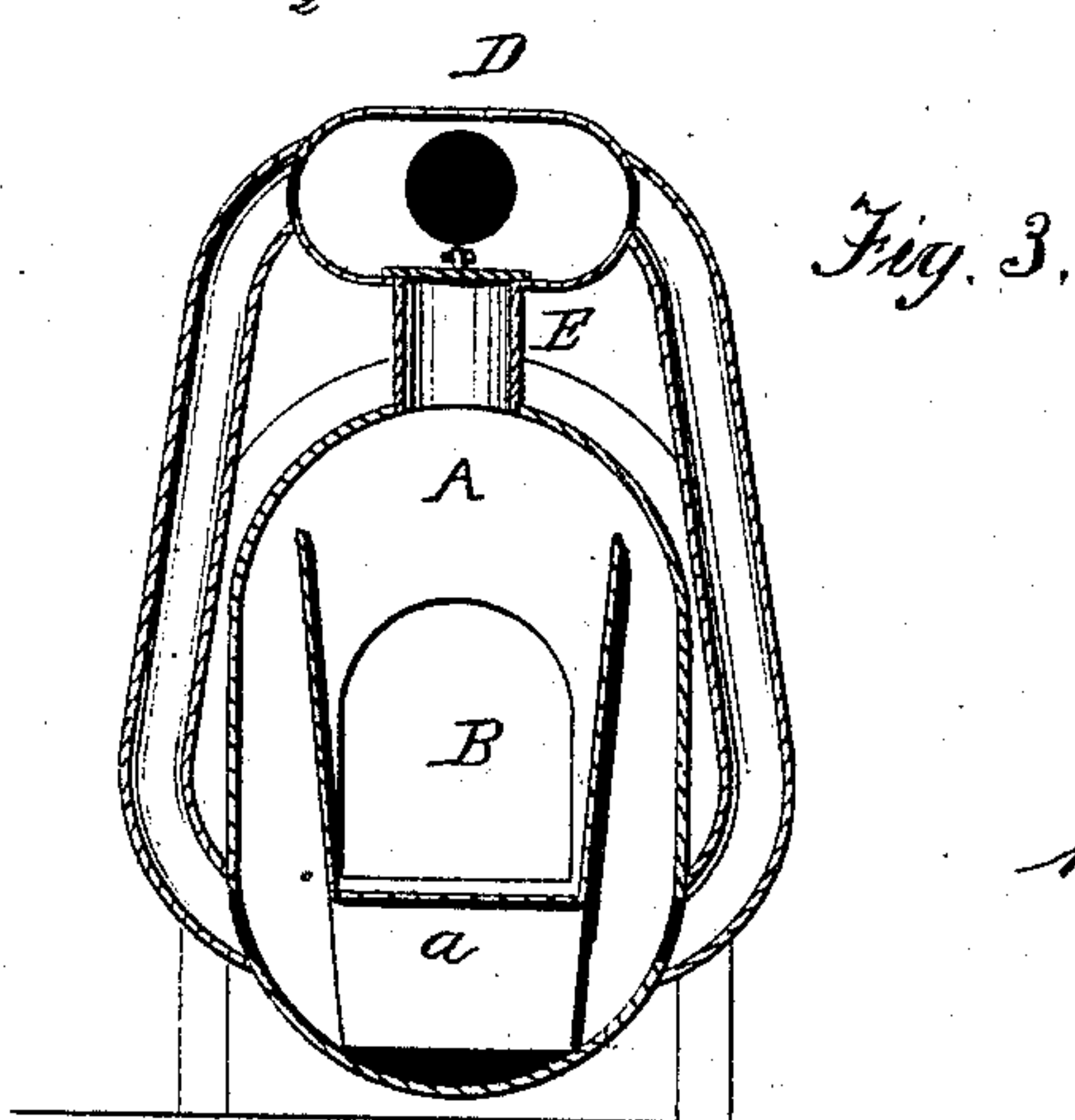
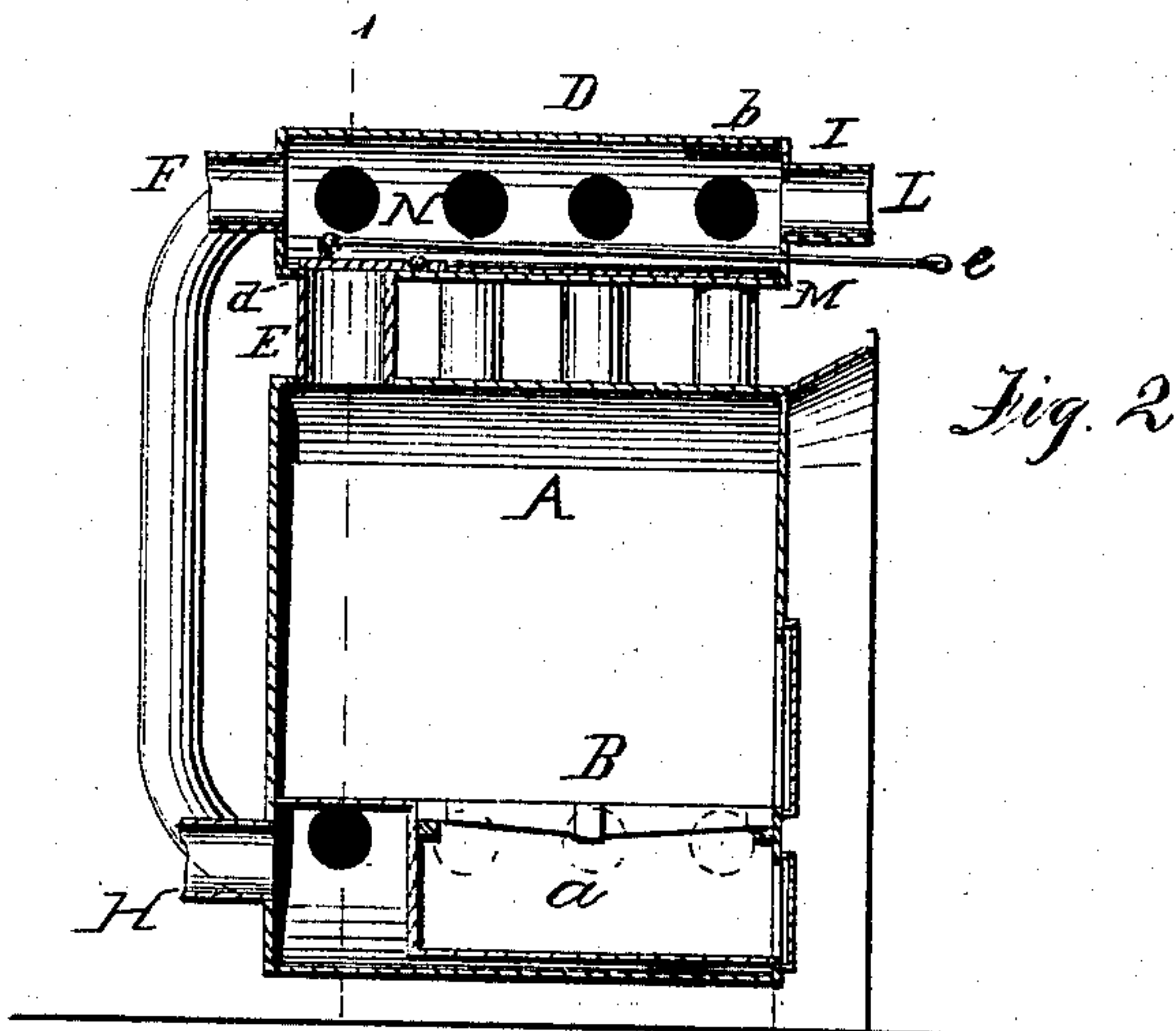
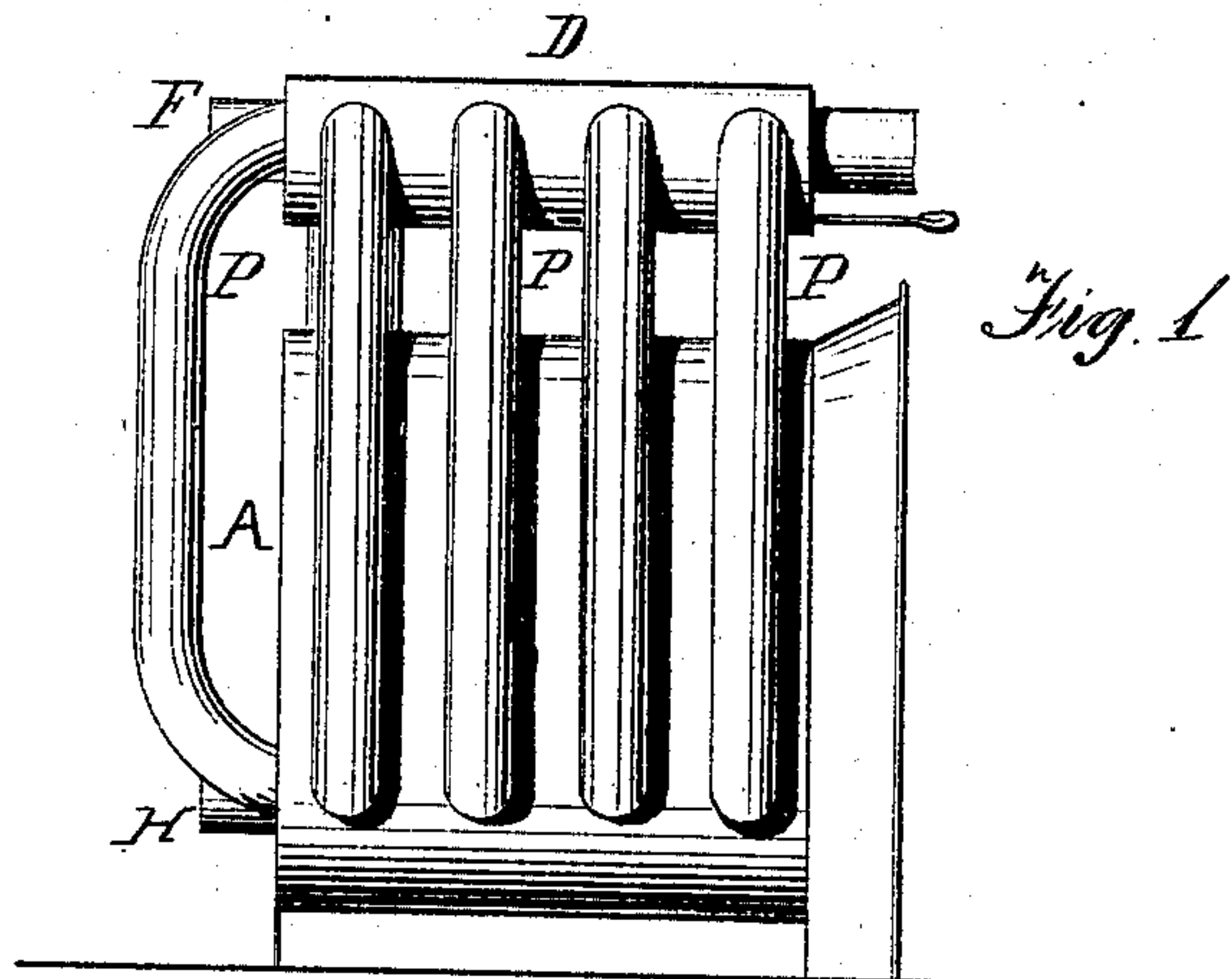


H. RANDALL.
HOT-AIR FURNACE.

No. 182,772.

Patented Oct. 3, 1876.



Witnesses:
Grenville Lewis
Chas. C. Gull

Inventor
Henry Randall
By his Attys
Cox & Cox.

UNITED STATES PATENT OFFICE.

HENRY RANDALL, OF QUINCY, ILLINOIS.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 182,772, dated October 3, 1876; application filed June 22, 1876.

To all whom it may concern:

Be it known that I, HENRY RANDALL, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Hot-Air Furnaces, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to certain improvements in heating-furnaces; and consists in the device hereinafter more specifically described.

The object of the invention is to provide an efficient and economic heater.

Figure 1 is a side elevation of a device embodying the elements of the invention. Fig. 2 is a central vertical longitudinal section of same. Fig. 3 is a section through the line 1 2.

A in the accompanying drawing is the body of the furnace, preferably oval, in vertical transverse section, and provided with the fire-chamber B, open at its top, and properly separated from the inner walls of the body, to afford a passage for the products of combustion over the edge of the chamber, below which is provided the ash-pit *a*. The front plate, to which both chamber and pit are connected, is provided with suitable doors, opening into those receptacles.

At a suitable distance above and parallel to the body is placed, in a horizontal position, the drum D, connected with the body by the flue E, which opens into the latter above the rear end of the fire-chamber. The rear ends of both body and drum are provided, respectively, with the smoke-pipe collar and clearing-aperture F and H. The drum D is also provided with the plate I, having in it the pipe-flange L, the base of the plate having a short flange, *b*, and an elongated one, M, the latter

having a hinged damper, N, which operates over an aperture, *d*, which, when the flange M is in position, forms the mouth of the flue E. Thus, as the damper is operated, the flue E is opened or closed, the operation being effected by the damper-rod *e*, which extends out in front of the plate I, which is retained in place by the flanges aforesaid.

The body is connected with the drum by a number of curved radiating flues, P, which extend upward from the sides and end of the body from points below the lower edge of the fire-chamber, and enter the sides and end of the drum, as shown.

It is clear that the damper and vent H or L being closed, the passage of the products of combustion will be upward through the flues P, and that thus a vast quantity of heat will be evolved, with a comparatively small consumption of fuel.

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

In a hot-air furnace the drum D, in combination with the furnace A and pipes or flues P, which connect the drum with the furnace from points in the fire-chamber opposite the ash-pit, wherefrom the mouths of the flues are separated by an impervious wall or plate, substantially as specified.

In testimony that I claim the foregoing improvement in hot-air furnaces, as above described, I have hereunto set my hand this 10th day of June, 1876.

H. RANDALL.

Witnesses:

H. F. ROESCHLAUB,
FRANK RICKER.