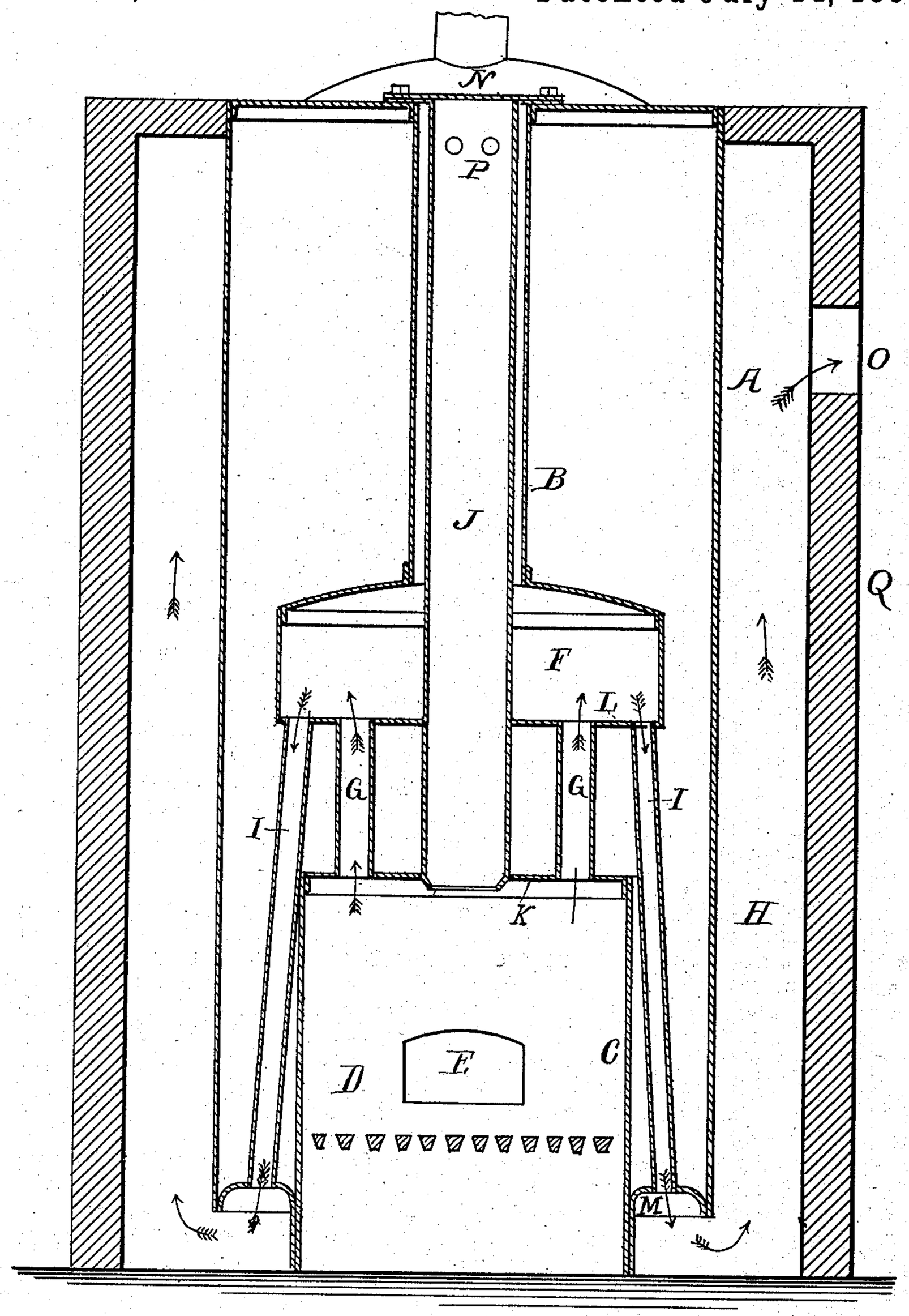
(No Model.)

R. MUNROE.

BOILER.

No. 322,120. Patented July 14, 1885.



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ROBERT MUNROE, OF ALLEGHENY, PENNSYLVANIA.

BOILER.

SPECIFICATION forming part of Letters Patent No. 322,120, dated July 14, 1885.

Application filed April 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MUNROE, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Boilers; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in boilers; and it consists in the peculiar construction hereinafter described.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of this specification, A represents the shell of the boiler, having an inner shell, B C. Within the shell C is a fire-chamber, D, E being the fire-door of said chamber, which communicates with a chamber, F, by means of flues G, said chamber F communicating with an outer heat-chamber, H, by means of flues I.

Within the case B, and extending from the top of the boiler to the crown of the fire-chamber, is a cylinder, J, which is employed as a magazine for supplying the fire-chamber with fuel. To the lower end of said cylinder is attached a casting, for the purpose of keeping the lower end from burning off. The flues G are secured in the crown K of the fire-chamber, and in the sheet L; and the flues I are secured in said sheet L and the lower end sheet, M, in the usual manner of securing flues. The cylinder J is detachable and removable, and is provided with a cap, N. Near the upper end of the cylinder are apertures P, for the escape of gas from said cylinder down into chamber F in the space between said cylinder and inner case, B, and is carried off through flue I into the heat-chamber H, and out at the exit-flue O into the stack.

The outer walls, Q, are constructed of masonry, if so desired, and may be constructed of sheet metal. The construction of the outer walls, Q, and of the boiler, hereinbefore described, will readily be comprehended and understood by the skillful boiler-maker from the foregoing description, and by reference to the accompanying drawings.

The operation is as follows: Fire being kindled in the fire-chamber D, the fuel—such as anthracite coal or other fuel—is charged into the cylinder J, the cap N being removed for that purpose. The smoke, gases, and heat, performing their office in the fire-chamber, pass up into the fire-chamber F through the flues G, then pass from the chamber F down through the flues I into the heat-chamber H, which surrounds the outer case, A, of the boiler, and, finally, pass out through the flue O into the stack.

The advantage of the hereinbefore described construction of boiler or steam-generating device consists in the large area of surface subjected to the action of the heat of the fire-chamber and flues and chamber F, and finally utilizing the heat around the boiler-shell A in the chamber H. But another very important advantage consists in having the cylinder J detachable and removable, also in the largeness and peculiar form and position of the chamber F, whereby the flues G I may be readily repaired. The facility for repairing the flues G I afforded by the chamber F will be apparent.

Having thus described my improvement, what I claim is—

1. The combination of the furnace D, chamber F, flues G, shell or tube B, extending from the upper end of the boiler to the top of the chamber F, and the detachable magazine, whereby access is afforded to the chamber F, substantially as described.

2. The combination of the furnace D, chamber F, flues G, tube or shell B, between the upper end of the boiler and the chamber F, the magazine J, perforated near its upper end, and the return-passage to the chamber F, formed by the walls of the tube and the magazine, substantially as described.

3. The combination of the furnace D, chamber F, flues G, tube B, magazine J, perforated near its upper end, the return-passage to the chamber F, the flues I, and the heat-chamber H, surrounding the boiler, substantially as described.

In testimony whereof I have hereunto set my hand this 2d day of February, A. D. 1885.

ROBERT MUNROE.

Witnesses:

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