

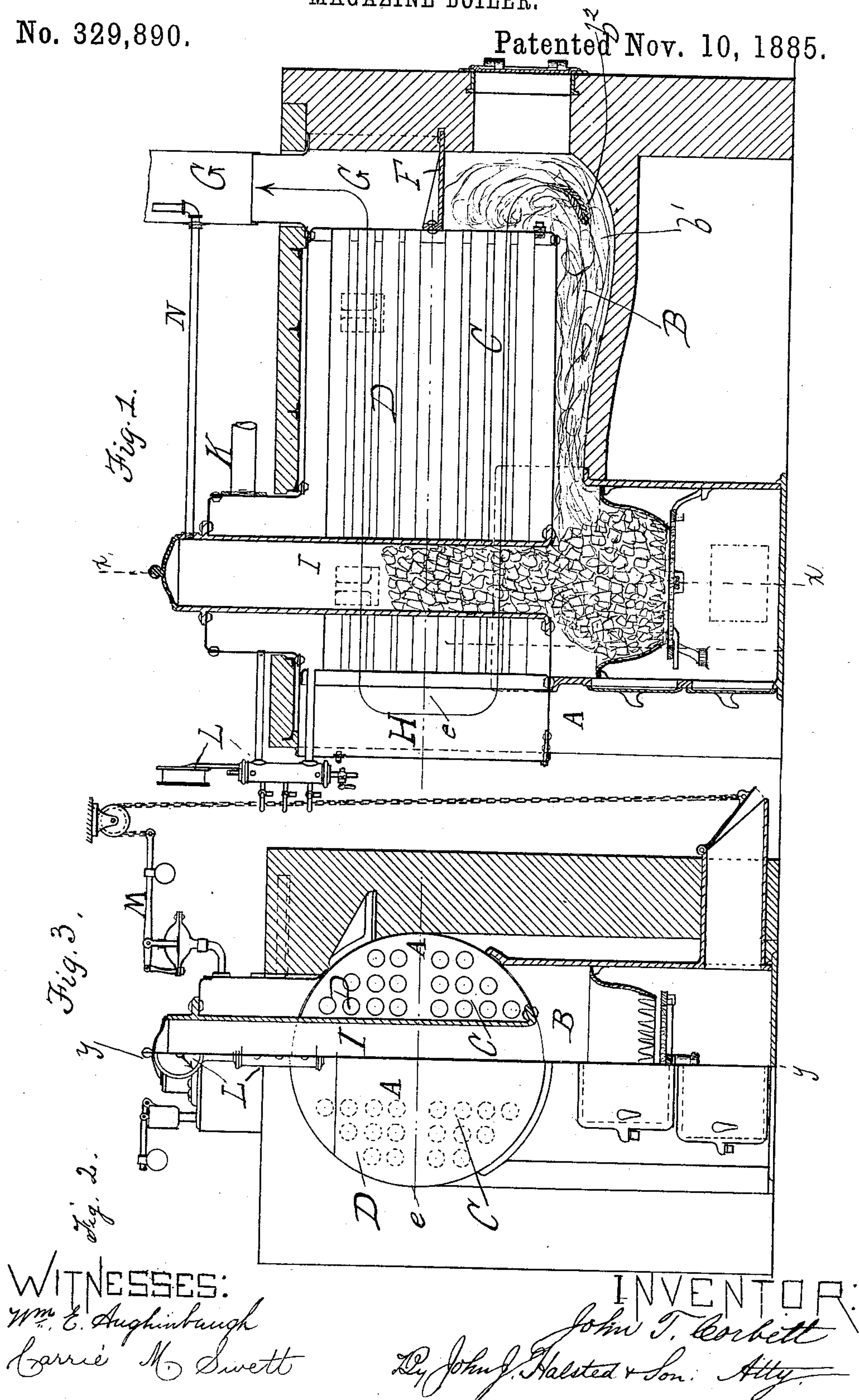
(No Model.)

J. T. CORBETT.

MAGAZINE BOILER.

No. 329,890.

Patented Nov. 10, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN T. CORBETT, OF AURORA, ILLINOIS.

MAGAZINE-BOILER.

SPECIFICATION forming part of Letters Patent No. 329,890, dated November 10, 1885.

Application filed August 3, 1885. Serial No. 173,391. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. CORBETT, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful
5 Improvements in Magazine-Boilers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of boilers in which the fuel is in a magazine and is self-
15 feeding, the combustion being at the base of the magazine, as in base-burning stoves or furnaces; and it consists in a special construction, which will presently appear, having for its main object economy of fuel and an improved
20 arrangement of parts, whereby the gaseous products of combustion and the heat generated shall have a route under the boiler from end to end, then through the boiler-tubes from rear to front, and thence again through boiler-
25 tubes in the reverse direction—that is, from front to rear—before making its exit through the stack.

Figure 1 is a longitudinal vertical central section of a boiler illustrating my invention;
30 Fig. 2 a front half, and Fig. 3 a half cross-section in the line $x x$ of Fig. 1.

A is the horizontal boiler, and which is inclosed within the structure or furnace in such manner that there will be a free passage or
35 flue, B, beneath the boiler, and this passage is preferably made gradually deeper toward and at the rear, as seen at b' , to afford freer travel for the heat and gases on their way to enter the rear ends of the lower set, C, of boiler-
40 tubes, and this passage is also curved or arched upward, as shown at b'' , the better to direct the heat and gases into the rear smoke-arch and into this set of flues.

F is a gate, diaphragm, or partition in the
45 stack G to arrest and prevent the escape of heat coming from the fuel until it shall first have passed through the lower set of boiler-tubes, C, to the space or smoke-arch H in front of the boiler, and from this space it is next
50 compelled to pass through the upper set of boiler-tubes, D, as shown by the arrow, from front e to rear, thus giving three traverses of the heated products of combustion upon and through the boiler before they reach the out-

let stack or chimney; but the boiler is also 55 heated by the magazine I, which passes vertically directly through the boiler, near its front, as best seen in Fig. 1, the boiler-tubes, as shown in Fig. 2, being ranged on both sides of this magazine or fuel-feeder. It will be 60 thus seen that any heat radiated from the magazine is imparted to the water, and that the tubes nearest the center of the boiler are in close proximity to this magazine. This materially facilitates the heating of the water, 65 and the location of the magazine permits the whole structure to be made very compact and quite economically.

K is the steam-pipe to convey the steam from the boiler to any point where it is needed 70 for heating or other purposes.

L is a steam-gage communicating with the steam-space; M, an apparatus connecting the door of the ash-pit with a steam-valve, and whereby this door may be more or less 75 closed or opened automatically by the steam to vary the draft as needed.

N is a small pipe leading from the top of the magazine to the smoke-stack to carry off any deleterious gases which may collect in the 80 magazine.

I claim—

1. In a horizontal boiler, a fuel-magazine extending vertically directly through that portion of the boiler in which are the boiler-tubes, 85 and near its front, substantially as and for the purposes set forth.

2. In combination with the horizontal boiler having a fuel-magazine extending vertically through the part containing the boiler- 90 tubes, and near its front, the described system of passages, substantially as set forth, whereby the hot air is conveyed, first, beneath the boiler from front to rear, next through the lower boiler-flues from rear to front, and, finally, 95 through the upper boiler-flues from front to rear to the smoke-stack.

3. In combination, the horizontal boiler A, vertical magazine extending through the boiler-tube part, as set forth, heat-passage B, partition F, lower set, C, of boiler-flues, upper set, 100 D, of boiler-flues, and smoke-stack G, these parts being arranged and operating as set forth.

JOHN T. CORBETT.

Witnesses:

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