

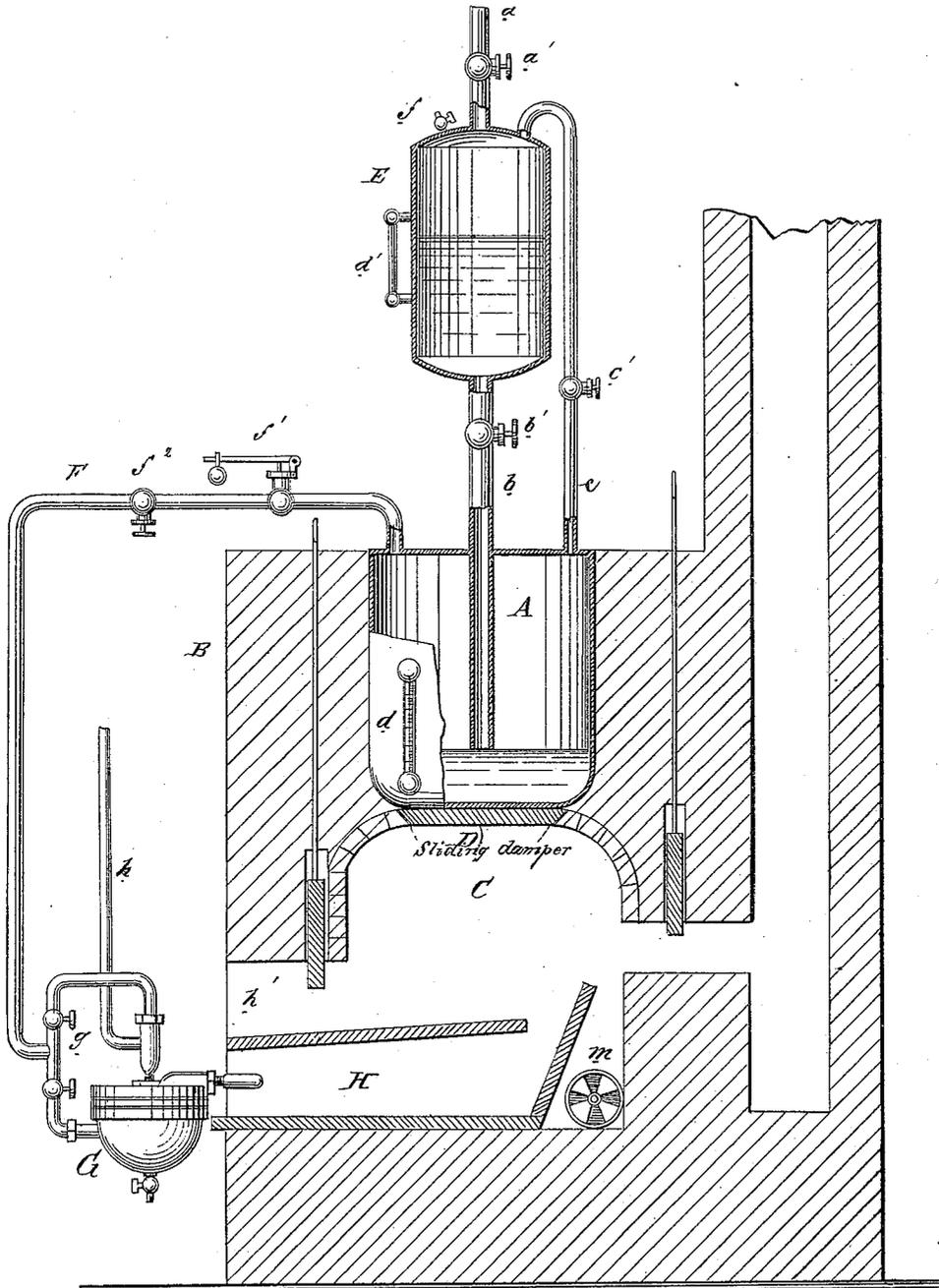
(No Model.)

F. A. MEYER.

HEATER AND FEEDER FOR STEAM BOILERS.

No. 253,218.

Patented Feb. 7, 1882.



WITNESSES:

Cnas. Nida
C. Sedgwick

INVENTOR:

F. A. Meyer
BY *Munn Ho*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK A. MEYER, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO MARSHALL LEFFERTS AND JOHN A. LEFFERTS, OF SAME PLACE.

HEATER AND FEEDER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 253,218, dated February 7, 1882.

Application filed June 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. MEYER, of the city, county, and State of New York, have invented certain useful Improvements in Heaters and Feeders for Steam-Boilers, of which the following is a specification.

The object of this invention is to provide a steam-boiler especially designed for the quick generation of steam and to be set in and used in combination with heating and melting furnaces, more especially those furnaces that are operated with liquid fuel.

The drawing represents a partly-sectional side elevation of the boiler and connections applied to a furnace designed for the burning of liquid fuel.

In the drawing, A represents the boiler, set within the brick-work of a furnace, B, above the combustion-chamber C thereof, a sliding damper, D, being set in the crown of said chamber C, so as to regulate the application of heat to said boiler A. This damper is dovetailed in the walls of the chamber C, and is adapted to be moved by a suitable rod, (not shown,) which shall be attached thereto and made to project outward through the brick-work of the furnace.

Above the boiler A is a water-reservoir, E, that receives its supply from a suitable source through a pipe, a, provided with a cock or valve, a', and from the bottom of this reservoir E a pipe, b, enters the boiler A and terminates at the water-line thereof, said pipe b being provided with a valve, b', to regulate the flow of water.

A steam-pipe, c, provided with a valve, c', connects the top of the reservoir E with the top of the boiler A. Both boiler A and reservoir E are provided with water-gages d d', respectively, and the reservoir with a steam-cock, f, to relieve the pressure therein. Steam entering the reservoir E from the boiler A through the pipe c heats the water in the former to the desired temperature, and the valve b' being opened, the steam forces water from the reservoir E into the boiler A.

From the top of the boiler a steam-pipe, F,

provided with a safety-valve, f', and a valve, f², is extended to the front of the furnace B, and there connected with the steam-pipes g of the injector G, into which injector G the liquid fuel is introduced through a pipe, h. The furnace B being in operation and the valve f² being opened, the steam and liquid fuel are mingled in the injector G and forced by the steam-pressure into the furnace mixing-chamber H, whence they escape into the combustion-chamber C, where air necessary to their combustion is supplied through the opening h' above the mixing-chamber H, and through the register m in the bottom of the combustion-chamber C.

With a boiler and its immediate connections constructed and arranged as herein shown and described a high pressure of steam can be quickly produced and easily maintained.

I am aware that means have before been provided whereby a small quantity of water is automatically supplied to a generator from a reservoir, by which means said water is immediately flashed into steam, and I therefore do not broadly claim such a device; but my invention is the result of careful experiment, and its peculiar construction is believed to possess advantages not secured by any other, especially in the arrangement of the steam-pipe, which communicates with the top of the generator, instead of being arranged just above the water line of said generator, whereby the passage of the steam cannot be impeded by the water.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of furnace B, having sliding damper D, boiler A, reservoir E, water-pipe b, extending from the bottom of said reservoir into said boiler A and terminating at its water-line, and steam-pipe c, extending from the top of boiler A to the top of said reservoir, and provided with valve c', substantially as and for the purpose specified.

FREDERICK A. MEYER.

Witnesses:

I. I. STORER,
C. SEDGWICK.