(No Model.)

P. F. DUNDON.

STEAM BOILER.

No. 281,037. Patented July 10, 1883.

Fig. 1.

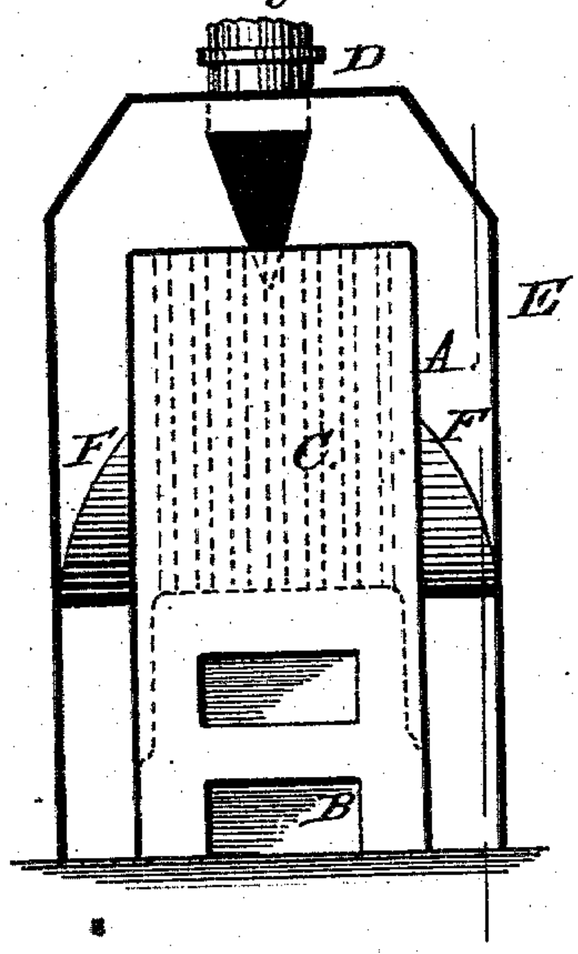
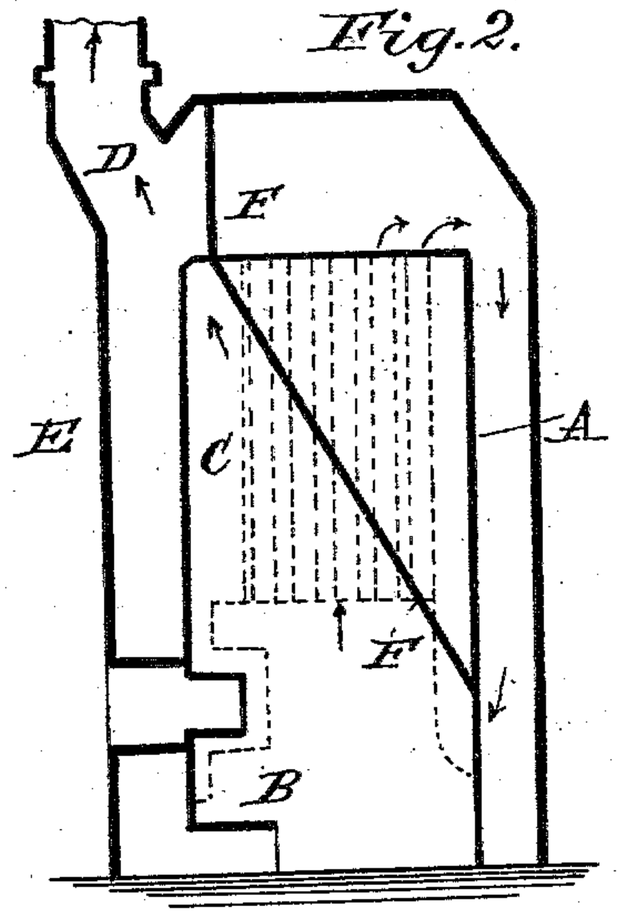


Fig. 2.



WITNESSES:

Fred. L. Dieterich.

Thos. Lockier

Patrick F. Dundon
INVENTOR.

By Louis Bagger & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

PATRICK F. DUNDON, OF SAN FRANCISCO, CALIFORNIA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 281,037, dated July 10, 1883

Application filed April 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, PATRICK F. DUNDON, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Steam-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, which form a part of this specification, and in which—

Figure 1 is a vertical sectional view of a vertical steam-boiler provided with my improvement, and Fig. 2 is a similar view of the same at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both the figures.

My invention has relation to that class of steam-boilers which are provided with an outside jacket, between which latter and the boiler the flame from the fire-place is forced by an inclined partition, and it contemplates certain improvements upon the steam-boiler for which Letters Patent No. 267,407 were granted to me on the 14th day of November, 1882; and it consists to that effect in the improved construction and combination of parts of such a boiler in which the partition, which reflects and guides the flame, will divide the flame-space between the jacket and the boiler-shell in such a manner that the flame in returning, after having passed through the flues in the usual manner, will strike the parts of the boiler-shell which are farthest away from the fire-place while it is the hottest, while after it becomes more cooled off it will strike the parts which are nearer to the fire-place, thus distributing the heat very evenly, as hereinafter more fully described and claimed.

The object in constructing boilers with a flame-jacket is, as is well known, to utilize as much of the heat as possible and to distribute the heat as evenly as possible over the entire exposed surface of the boiler; and to accomplish this I construct the outer jacket, which I designate E in the accompanying drawings, so as to cover the entire outer surface of the boiler-shell A, leaving a space between it and the shell, which space is continued at the upper end of the jacket, at the front of the same, into the chimney D. The inclined partition F starts from the rear of the boiler a short distance above the bottom, and extends upward on both sides of the boiler in the flame-space to the upper corner of the front of the boiler, where it extends straight upward to the top of the jacket to the rear of the chimney.

B is the fire-place, and C indicates the flues; and it will be seen that as the flame ascends through the flues and reaches the top of the boiler it will be deflected by the top of the jacket and pass down around the upper rear portion of the boiler-shell, which is the portion of the same which is farthest from the fire-place, but is subjected to the action of the flames immediately after they pass out of the flues, and when they consequently are hottest, whereupon they pass under the lower edge of the partition to the rear of the fire-place, and pass upward around the lower front portion of the boiler, which is nearest to the fire-place, and consequently needs not, for the equal distribution of the heat, to receive the flames as hot as the upper rear portion, and at last the flames pass out into the chimney. In this manner it will be seen that the portion of the boiler which is farthest away from the fire-place will receive the action of the flames when they are hottest, while the portion of the boiler which is nearest to the fire-place will be acted upon by the flames when they are somewhat cooled off, whereby an equal distribution of the heat is accomplished.

I am aware, as stated in the preamble to this description, that vertical steam-boilers have been made having an outer jacket, forming a space having vertical partitions, in which the flames from the fire-place are carried around the outside of the boiler-shell, and I do not claim such construction, broadly; but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the vertical boiler A with the flame-jacket E, covering the boiler, forming a space between it and the boiler-shell, and having oblique partition F, extending from the top of the jacket at one side of the smoke-stack across in the space between the boiler and the jacket to near the bottom, as and for the purpose shown and set forth.

2. The vertical boiler A, having fire-place

B and flues C, in combination with the outer shell or casing, E, opening into the smoke-stack D, and having the oblique partition F, extending from one side of the smoke-stack down to the top of the boiler and across the sides of the same to near the bottom of the boiler in the rear of the furnace, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

PATRICK F. DUNDON.

Witnesses:
M. A. DONNELLY,
WILLIAM CREIGHTON.