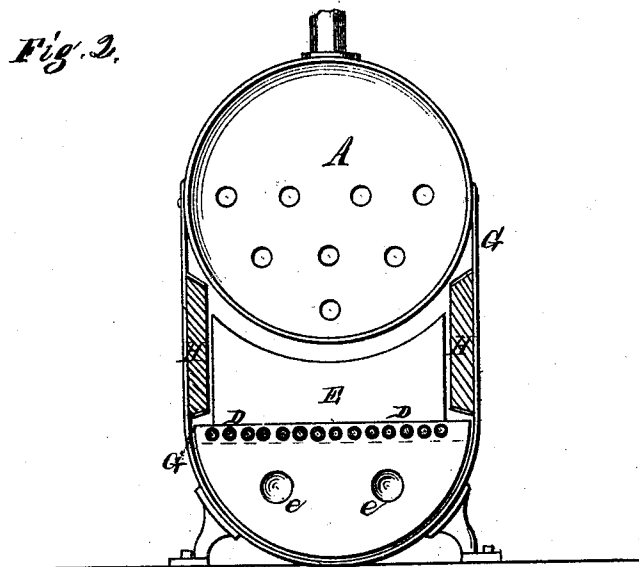
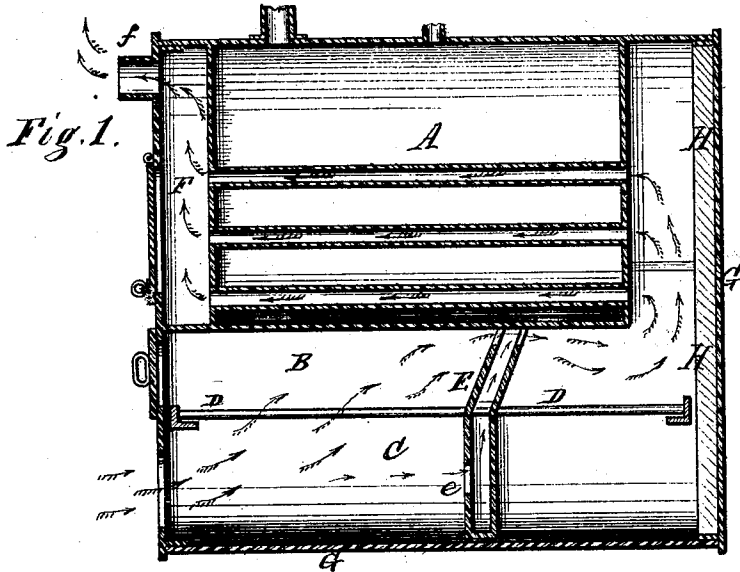


I. G. Skinner,
Boiler Furnace.

No. 111,580.

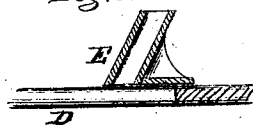
Patented Feb. 7. 1871.



Witnesses.

J. D. Duncan
H. A. Smith

Fig. 3.



Inventor.

I. G. Skinner
per J. A. Moody
att'y.

UNITED STATES PATENT OFFICE.

LE GRAND SKINNER, OF CHITTENANGO, NEW YORK.

IMPROVEMENT IN BOILER-FURNACES.

Specification forming part of Letters Patent No. **111,580**, dated February 7, 1871.

To all whom it may concern:

Be it known that I, LE GRAND SKINNER, of Chittenango, in the county of Madison and State of New York, have invented a new and useful Improvement in Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a cross-section, and Fig. 3 shows a modification in the construction of the bridge-wall.

Similar letters of reference indicate like parts in the several figures.

This improvement relates chiefly to the construction of steam-boilers for farmers, &c., where only a small power is required; and its object is to combine a furnace with the boiler in such manner as to occupy but little space and be cheaply constructed as far as the furnace part is concerned, and yet be complete as a whole without having to set the boiler in masonry or to construct it with a water fire-chamber; also, to make the grate-surface variable in such manner as to be simple in construction and operation, as hereinafter more fully explained.

In the accompanying drawing, A is an ordinary horizontal flue-boiler. B is the fire-chamber. C is the ash-pit. D is the fire-grate; E, the bridge-wall, and f the smoke-pipe or chimney. The boiler is mounted on a sheet-iron base or furnace, G, which is riveted to the

sides of the boiler, the side walls of the furnace being flat, as shown in Fig. 2, and the said walls are provided with a non-conducting lining of fire-brick, H H, Figs. 1 and 2.

By these means the boiler is provided with a cheap and economical furnace, as there is plenty of fire-space for the combination of the combustible gases before they enter the small flues of the boiler.

The bridge-wall E slides on the grate-bars D, so that wood of about the full length of the boiler can be accommodated on the grate, or the grate-surface can be reduced by drawing the bridge-wall forward, as desired.

The said bridge-wall is made double, as shown in Fig. 1, and has an air-passageway, e, by which the plates of the wall are kept from overheating, and air is supplied to the unconsumed gases that pass over the wall.

The bridge-wall E can be placed wholly upon the grate-bars, as shown in Fig. 3.

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

The horizontal flue-boiler A, sheet-iron casing and furnace G, with non-conducting lining of fire-brick, H, grate D, and sliding bridge-wall E e, all constructed and arranged as and for the purpose specified.

The above specification of my invention signed by me this 20th day of December, 1870.

L. G. SKINNER.

Witnesses:

WM. DUNCAN,
F. A. MORLEY.