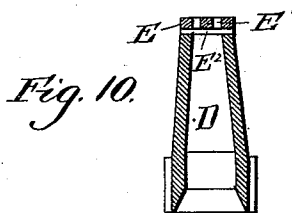
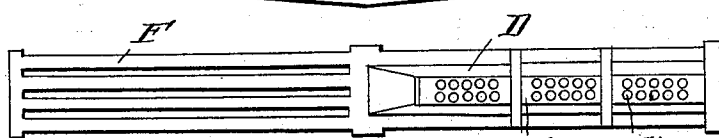
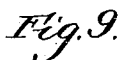
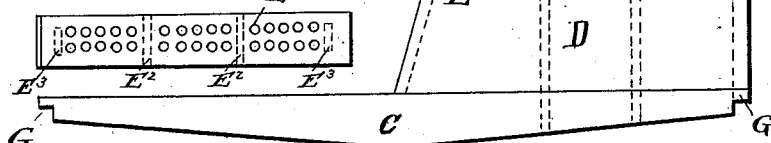
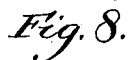
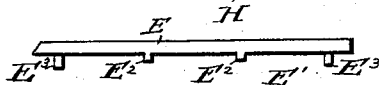
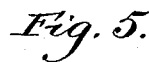
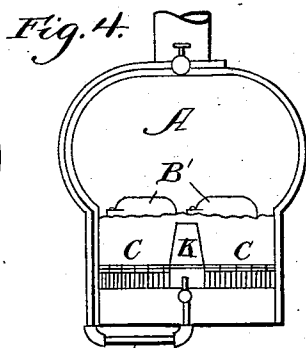
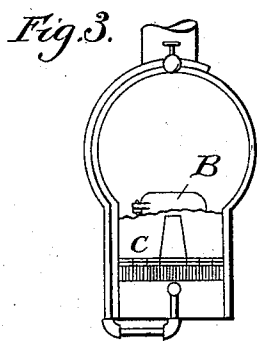
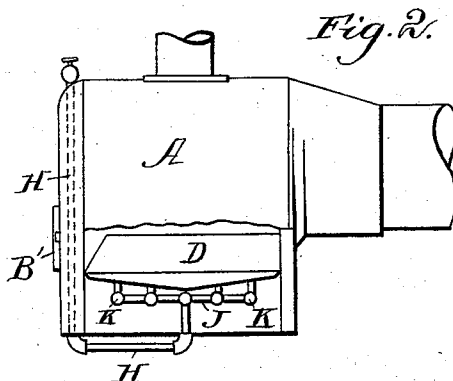
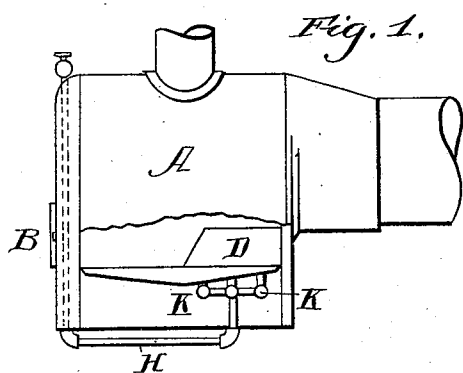


(No Model.)

T. LUSTIG.
SMOKE BURNER.

No. 478,447.

Patented July 5, 1892.



Witnesses:

J. B. McGivver.
F. J. Benjamin.

Inventor.

Theodor Lustig
by Francis W. Parker,
Att'y.

UNITED STATES PATENT OFFICE.

THEODOR LUSTIG, OF CHICAGO, ILLINOIS.

SMOKE-BURNER.

SPECIFICATION forming part of Letters Patent No. 478,447, dated July 5, 1892.

Application filed October 19, 1891. Serial No. 409,237. (No model.)

To all whom it may concern:

Be it known that I, THEODOR LUSTIG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Smoke-Burners, of which the following is a specification.

My invention relates to devices for consuming or preventing smoke, and has for its object to provide convenient means for accomplishing this result. It is illustrated in the accompanying drawings, and applied to an ordinary fire-box or furnace.

Figure 1 is a side view showing the interior of the furnace. Fig. 2 is a similar view showing a modification. Fig. 3 is an end view of the form shown in Fig. 1. Fig. 4 is an end view of the form shown in Fig. 2. Fig. 5 is a plan view of the grate. Fig. 6 is a side view of my device. Figs. 7 and 8 are details of the cover. Fig. 9 is a bottom view of my device, and Fig. 10 is a cross-section through the same.

Like parts are indicated by the same letter in all the figures.

A is the boiler, having the door B or the doors B' B'.

C C are the usual grate-bars.

My device or attachment is composed of the upwardly-projecting case D, preferably with the inclined sides, as shown, and with the cover E, having the apertures E' E' therein and the ribs E² E² thereon, whereby it rests upon the sides of the case, and the lugs E³ E³ to be received into the ends of the case. The lugs E³ are shorter than the ribs, being centrally disposed, transversely, upon the cover, and they also have greater depth than do the ribs E², this construction insuring that the cover shall be securely held upon the top of the case, while there shall be left a series of openings between the cover and the top of the case and between the ribs E². This case is seated upon any kind of an open bar; but I have shown it for convenience as forming part of the grate-bar, having the bars F F of the usual form at the opposite ends in the case. The grate-bar so formed is provided with the shoulders G G, by which it is received upon the wall or suitably-projecting ledge therefrom within the fire-box space. The case D may be made full length, if desired, or half-length.

H is a pipe leading from the steam-space of the boiler to a point beneath the case where

it opens into a pipe J, longitudinal with and placed beneath the bottom of the case. This pipe is provided with a series of short upwardly-projecting nozzles K, which discharge upwardly within the case.

My invention can be readily utilized by constructions very greatly differing in detail, form, or arrangement from that herein shown, and I do not wish to limit myself to the specific form set forth.

The use and operation of my invention is as follows: An ordinary boiler provided with grate-bars of the ordinary pattern requires no alteration to fit my device thereto; but it is only necessary to remove so much of the central portion of the grate-bars as to give room for the introduction of a suitably formed and shaped device. This is preferably placed through the middle of the furnace. Of course one or more such devices could be employed; but I have found in practical use that one is sufficient. They might also be placed at right angles to the length of the boiler, as well as longitudinally thereto, or in other convenient positions. The case may extend the full length of the bar, or may occupy only one-half of the bar, as indicated in both ways in the drawings. The essential feature of the construction consists in supplying to a furnace what is substantially the same as an ordinary grate-bar, with the additional feature of an upwardly-projecting case, through which and from which fluid is discharged within and upon the fire at a position above the surface thereof. The ordinary air may be permitted to thus discharge or steam may be in like manner discharged into the furnace. In any event fluid passing through the case passes through the apertures upwardly and is also deflected laterally through the space between the cover and sides of the case. Steam and atmospheric air, or either without the other, may be used or any other suitable device for accomplishing the result.

I claim—

In a smoke-consuming device for furnaces, the combination, with a case D, of a perforated cover E therefor, having the ribs E² on its under side and also the lugs E³, the latter being shorter and of greater depth than the ribs E², substantially as set forth.

THEODOR LUSTIG.

Witnesses:

CELESTE P. CHAPMAN,
WALTER J. GUNTHERP.