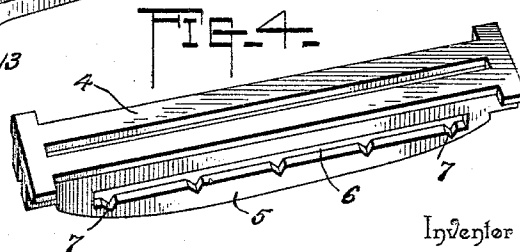
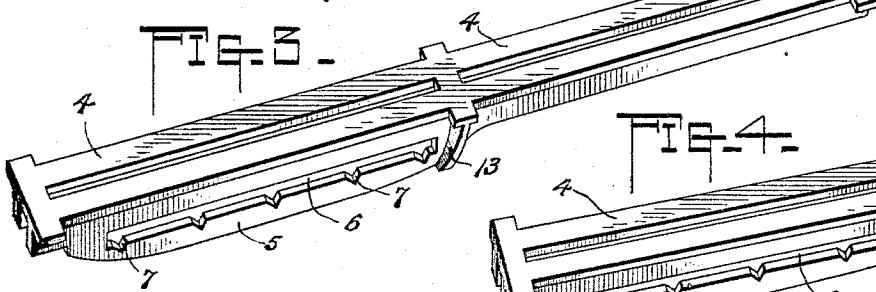
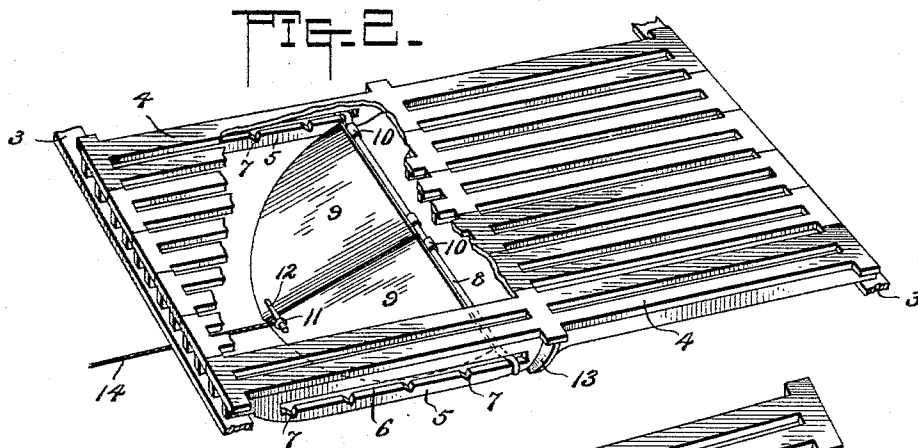
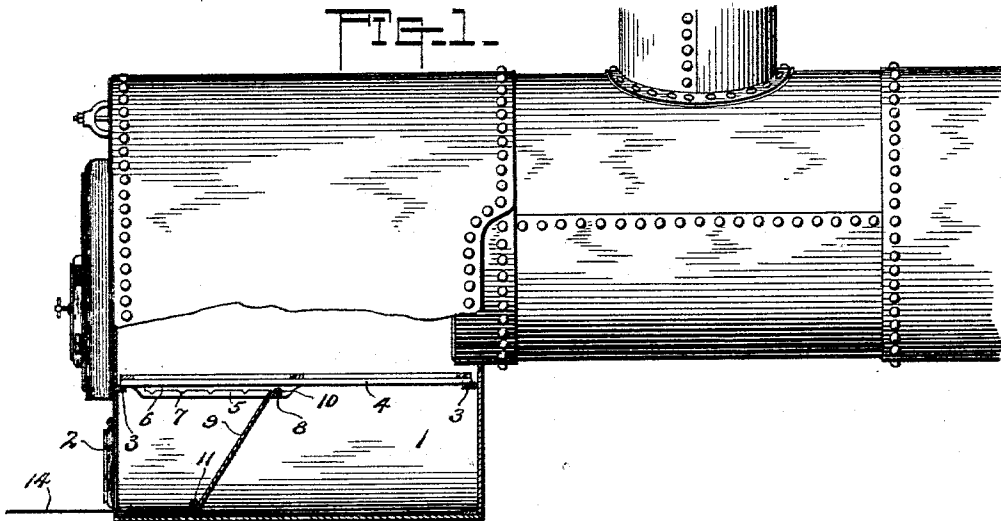


(No Model.)

L. J. BRETZ.
DRAFT REGULATOR FOR FURNACES.

No. 583,975.

Patented June 8, 1897.



Inventor

Louis J. Bretz,

Witnesses

A. M. Lupton.

R. M. Smith

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

LOUIS J. BRETZ, OF HUNTINGBURG, INDIANA.

DRAFT-REGULATOR FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 583,975, dated June 8, 1897.

Application filed June 23, 1896. Serial No. 596,627. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. BRETZ, a citizen of the United States, residing at Huntingburg, in the county of Dubois and State of Indiana, have invented a new and useful Draft-Regulator for Furnaces, of which the following is a specification.

This invention relates to boiler-furnaces; and the object in view is to provide, in connection with such a furnace, a draft-regulating device which is capable of being adjusted for the purpose of directing the draft to any desired portion of the grate and preventing the passage and admission of cold air to the flues of the boiler.

It is also the aim of the invention to construct the draft-regulator in a manner that will admit of its ready removal from the fire-box whenever necessary and also permit the same to be lifted for the purpose of removing ashes, &c., from the fire-box.

With the above objects in view the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the claims hereto appended.

In the accompanying drawings, Figure 1 is a longitudinal section through a boiler-furnace, showing the improved draft-regulator applied thereto. Fig. 2 is a perspective view of the draft-regulating device, illustrating the manner of mounting and adjusting the same. Fig. 3 is a detail perspective view of one of the end grate-bars. Fig. 4 is a similar view of an end grate-bar of a shorter length.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The draft-regulator herein contemplated may be used in all kinds of furnaces, engines, and brick and pottery kilns, but for convenience will be described as applied to an ordinary boiler-furnace.

Referring to the accompanying drawings, 1 designates the fire-box of an ordinary boiler-furnace, the same being shown of semicylindrical form and provided at the front end with an ash-door 2. At each end of the fire-box is arranged a horizontal ledge or rest 3 for supporting the extremities of the grate-bars 4. These grate-bars may be of any usual

or preferred general form. For the purpose of carrying out the present invention the end grate-bars are provided adjacent to their front ends with depending flanges 5, and these flanges are provided below the normal planes of the grate-bars with longitudinal slots 6, the lower edges of which are notched or toothed, as indicated at 7, to receive the opposite extremities of a horizontal rod or bar 8.

Upon the rod or bar 8 are suspended two draft-plates 9, each of substantially quadrantal form and provided at its upper edge with hooks 10 for engaging over the rod or bar 8. The two draft-plates 9 may, if desired, be made into one; but it is preferable to make the same in two or more pieces overlapping each other at their contiguous edges. By making the draft-plate in two parts the removal of the same from the furnace is greatly facilitated, it being only necessary to unhook the sections of the draft-plate and remove them separately. In order that the two parts of the draft-plate may be swung and adjusted together, one of the plates is provided adjacent to the overlapping edge of the other plate with an eye 11, through which a pin 12 is inserted, said pin extending, as shown, in front of both plates. The rod or bar 8 closely underlies the intermediate grate-bars 4, so as to prevent, as far as possible, the draft from passing between such rod and grate-bars. The end grate-bars are also provided upon their outer sides with flanges 13, which lie close to the inner wall of the fire-box and serve as cut-offs for preventing the draft from passing to the rear part of the grate-bars. The depending flanges 5 are shown as extending only approximately half the length of the grate-bars. When, however, short grate-bars are used, as is the case in some furnaces, the depending flanges 5 may extend substantially the entire length of said grate-bars, as shown in Fig. 4.

From the foregoing description it will be seen that the rod or bar 8 may be adjusted in the slots 6, the same being held at any desired point by the teeth or notches 7. The draft-plate may thus be adjusted to a corresponding point beneath the grate-bars, thus regulating the direction of the draft. The draft plate or plates incline downward and forward and rest at their bottom edges against

the bottom of the fire-box, and in order to facilitate the lifting of said plates for the purpose of removing ashes, &c., a wire, cable, or chain 14 is attached to one or both of said plates and passed through the ash-door opening or a perforation in the front wall of the fire-box. With the draft-plate in place it will be impossible for improperly-heated air to pass through the rear portion of the furnace and gain access to the flue.

It will be understood that the device is susceptible of changes in the form, proportion, and minor details of construction which may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a fire-box, and a grate, of depending flanges on spaced grate-bars, said flanges being provided with longitudinal slots having notched or toothed edges, a rod or bar having its ends inserted in said slots and adjustable lengthwise thereof, and a draft-plate suspended on said rod or bar

and adjustable therewith substantially as described.

2. In a furnace, the combination with spaced grate-bars, of a rod or bar having its ends adjustably mounted therein, and a draft-plate suspended on said rod or bar and made in sections, substantially as described.

3. In a furnace, the combination with the fire-box, of a grate the end bars of which are provided with depending flanges and also with lateral flanges forming cut-offs for the draft, a rod or bar extending between said end grate-bars and having its ends adjustably mounted in said depending flanges, and a draft-plate suspended on said rod or bar and adjustable therewith, substantially as described.

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

LOUIS J. BRETZ.

Witnesses:

PHIL. BAMBERGER,

FRED. E. BRAUDENSTEIN.