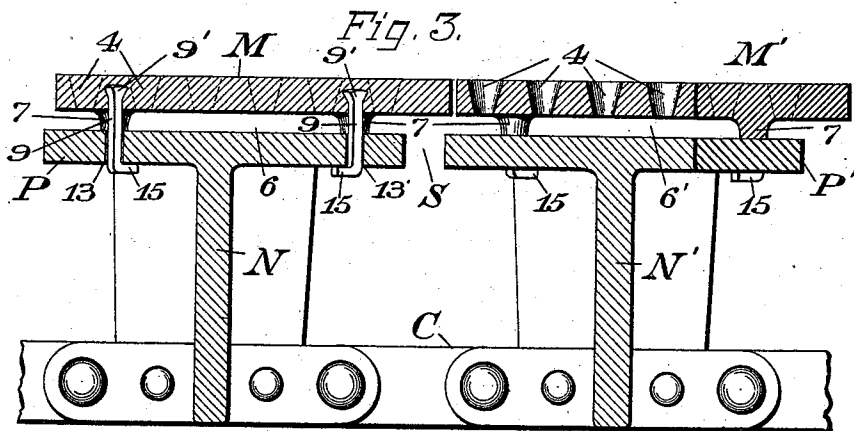
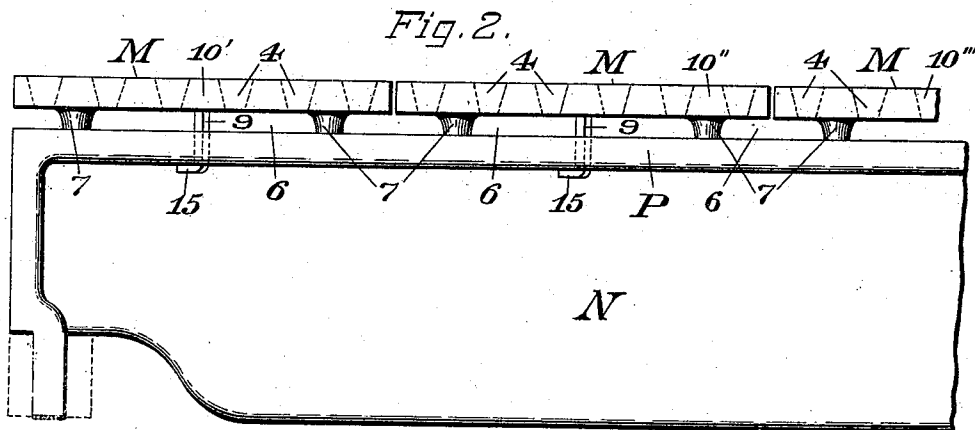
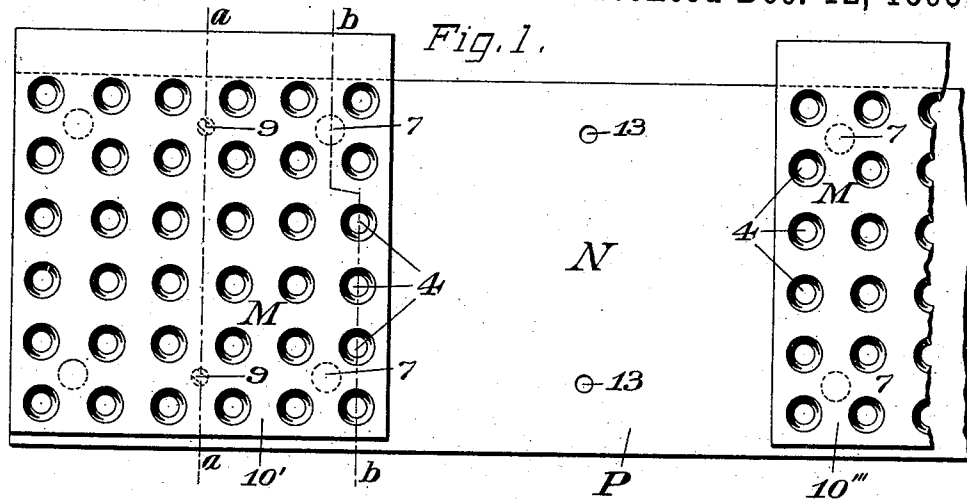


(No Model.)

E. B. COXE.
FLOOR PLATE FOR FURNACES.

No. 510,580.

Patented Dec. 12, 1893.



Witnesses:

John L. Edwards Jr.

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By his Attorney,

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UNITED STATES PATENT OFFICE.

ECKLEY B. COXE, OF DRIFTON, PENNSYLVANIA.

FLOOR-PLATE FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 510,580, dated December 12, 1893.

Application filed July 26, 1893. Serial No. 481,528. (No model.)

To all whom it may concern:

Be it known that I, ECKLEY B. COXE, a citizen of the United States, residing at Drifton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Floor-Plates for Furnaces, of which the following is a specification.

This invention relates to that class of grates or furnace-floors which are used for burning the finer sizes of anthracite coal; the object being to provide an improved furnace-floor adapted for use in connection with the furnace described in my prior application, Serial No. 477,264, filed June 12, 1893.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of a portion of a grate or furnace-floor embodying my present improvements. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is a view showing in cross-section two grate-bars or floor-plates arranged side by side, the one at the left-hand being sectioned on the line *a-a*, and the one at the right-hand on the line *b-b*, Fig. 1, both said floor-plates being herein shown carried by the chain (or chains) C, after the manner described in said prior application.

Similar characters designate like parts in all the figures.

The grate-bar, or floor-plate, considered as a whole, consists of a suitable beam or bar, as for instance the beam N, having on its upper side (or itself constituting) a fuel-supporting plate P, and an upper-plate M, set at some distance above said supporting plate and perforated by holes, 4, for the passage of air through the fuel thereon.

When the floor-plates are assembled for use, as in Fig. 3, the lower plates P and P', of the successive grate-bars are set at a distance apart to provide an air-space, S, through which an air-blast from below may pass up into the horizontal spaces, 6, 6', respectively between said lower plates P, P', and upper plates M, M'. The perforations 4, of the upper plates are shown formed conical, largest at the upper end, so that the fine fuel therein will, when the plates are inverted, (as when going along the under run of the endless

grate shown in my aforesaid application) run out of said holes and thus free the upper plate ready for use again; and when, while being so used, the grate-bar as a whole is carried over the end of its circuit from the upper run to the lower run of the endless grate, any fuel or ash which may have passed through said upper-plate perforations into said horizontal spaces 6 and 6', will be discharged from said spaces ordinarily by gravity. Otherwise the same may whenever necessary, be removed by the attendant by means of some suitable implement inserted between the two plates of the grate-bar.

In Fig. 2, the upper-plate is shown formed in three sections, 10', 10'' and 10''', set end to end to form one continuous surface; in Fig. 1, however, one of these sections 10'', is omitted for the purpose of more clearly illustrating the arrangement of the several details.

In some cases the entire grate-bar or floor-plate as a whole may be constructed integral, but I prefer that the upper plate or plates should be made separate and secured upon the lower plate by some convenient attaching device. Accordingly said upper plates are herein shown furnished with the supports or posts, 7, (which however may, if preferred, be formed upon the lower plates P) and are also provided with the fastening pins, 9, which are secured in the upper plate by means of the enlarged head, 9', embedded in said plates, and which pass through the holes 13 in the lower plate and are bent thereunder to form the retaining hooks 15. This feature of construction is described and claimed in a separate application, Serial No. 480,620, filed July 15, 1893.

The subject-matter herein described and claimed is also shown in a separate application, Serial No. 479,987, filed July 10, 1893, to which reference may be had.

Having thus described my invention, I claim—

1. In a grate or furnace-floor, the combination with a fuel-supporting lower-plate, of a perforated upper-plate set at a distance above said lower-plate, there being a lateral space between said plates for the admission of air to the perforations of the upper-plate, substantially as described.

2. In a grate or furnace-floor, the combination with a series of fuel-supporting lower-plates set side by side at a distance from each other and having an air-passage between the
5 edges of the same, of perforated upper-plates set at a distance above said lower-plates, respectively, and set edge to edge to form a substantially continuous furnace-floor surface and having a space between said upper-plates

and lower-plates for admission of air from to said lower-plates air-passage to the perforations of the upper-plates, substantially as described.

ECKLEY B. COXE.

Witnesses:

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