

(No Model.)

E. B. COXE & F. H. RICHARDS.
TRAVELING GRATE.

No. 510,573.

Patented Dec. 12, 1893.

Fig. 1.

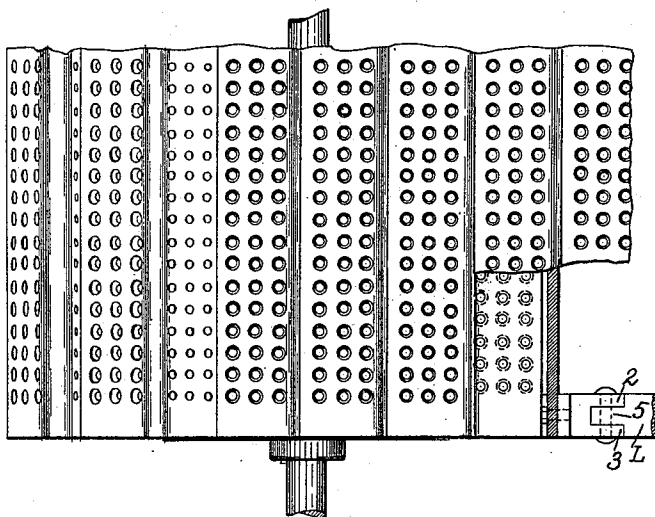
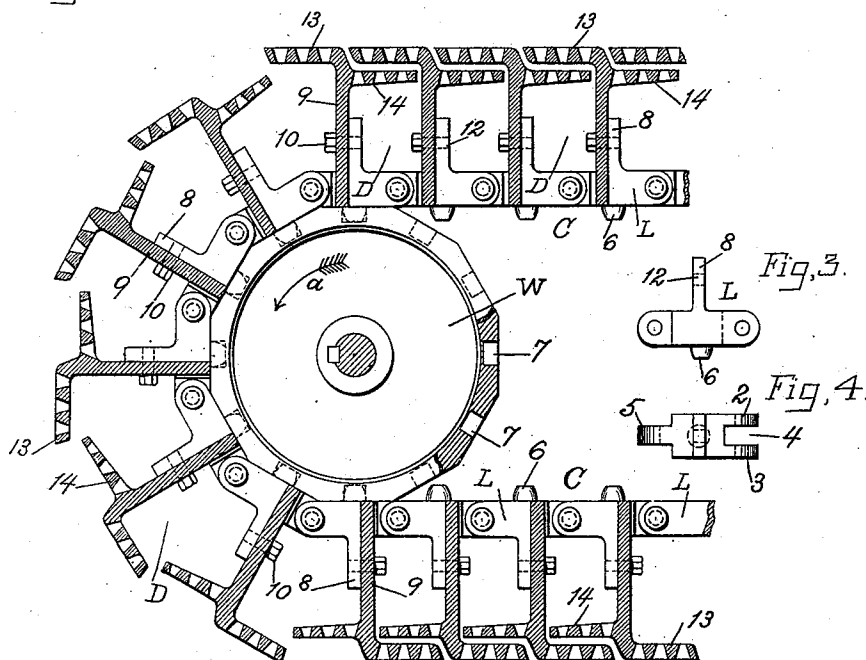


Fig. 2.



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TRAVELING GRATE.

SPECIFICATION forming part of Letters Patent No. 510,573, dated December 12, 1893.

Application filed July 10, 1893. Serial No. 479,989. (No model.)

To all whom it may concern:

Be it known that we, ECKLEY B. COXE, residing at Drifton, in the county of Luzerne and State of Pennsylvania, and FRANCIS H. RICHARDS, residing at Hartford, in the county of Hartford and State of Connecticut, citizens of the United States, have invented certain new and useful Improvements in Traveling Grates, of which the following is a specification.

This invention relates to traveling grates or furnace-floors, the object being to furnish an improved sectional floor, of the class specified, adapted for use in the class of furnaces shown in the Letters Patent No. 499,716, granted to Eckley B. Coxe June 20, 1893.

Our present invention is in part, in the nature of an improvement on the grate or furnace-floor described and claimed in the application of Eckley B. Coxe, Serial No. 479,987, filed July 10, 1893.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of a portion of a grate-mechanism embodying my present improvements. Fig. 2 is a sectional side elevation of the mechanism shown in Fig. 1. Fig. 3 is a side view, and Fig. 4 a plan view of one of the beam-carrying chain-links.

Similar characters designate like parts in all the figures.

The grate-mechanism, a portion of which is herein shown and described, belongs to that class in which the furnace-floor is double, comprising two plates or sets of plates, the one above the other. The several grate-bars, or floor-sections, are carried by a suitable number of endless chains, of which only one is shown in this application, being designated in a general way by C. This chain, in the preferred form thereof herein shown, comprises a series of duplicate links, L, which at one end are bifurcated as shown in Figs. 1 and 4, having the two ears 2 and 3 and intermediate space 4 for receiving the central ear 5 of the opposite end of the link; but any other suitable form of link may be used. On its lower side, as shown in Figs. 2 and 3, the described link is shown provided with a suitable lug, or projection, 6, for engaging the chain-wheel of the grate-mechanism; which

wheel is designated by W in Fig. 2, and has a number of recesses, 7, for receiving said projections 6. The chain-links are also provided, on the side opposite to said projections 6, with a lug, or post, 8, against which the furnace-floor beams, or bars, 9, are clamped by means of some suitable bolts, as 10; which bolts are or may be screwed into a threaded hole made at 12 in said link-posts.

The floor-sections, or grate-bars, designated in a general way by B, are of duplicate construction, and, in the preferred form thereof herein shown, comprise a suitable beam, or bar, as 9, and a floor-section having connected upper and lower floor-plates at the opposite sides, respectively, of the floor-section. By reason of this construction of the floor-sections, when these are assembled side by side as shown in the right-hand portions of Figs. 1 and 2, the upper-plates 13 overlap, and stand slightly above, the corresponding lower plates 14, the upper plate of one floor-section overlapping the lower plate of the adjacent floor-section.

The movement of the upper run of the endless-grate or furnace-floor is intended to be toward the left-hand in Fig. 2, as indicated by the arrow *a* shown on the chain-wheel W. The floor-sections when passing over said wheel at the left-hand side thereof, are separated as there shown, and so that the ashes and cinders from one floor-section will, as this becomes more inclined, be discharged forwardly upon and over the next floor-section and finally entirely disposed of, without being delivered, to any considerable extent, into the spaces D between the grate-bars or beams B, and between the lower floor-plates 14 and the chain-wheel. By means of the organization shown and described, the floor-sections fully discharge their load of cinder and ashes, and do not become clogged by the accumulation thereof between the successive beams of the grate-mechanism.

An important advantage of the construction herein shown and described is that the several floor-sections may be exact duplicates and interchangeable; also that each floor-section together with its supporting beam (these parts being, preferably, made integral as herein shown) may be readily removed and replaced

without interfering with the adjacent floor-sections; and that the floor-sections are of the form and construction adapting them to be cast in a single piece ready for use, there not
5 being in the same section one floor-plate above another. In practice, the floor-sections may be made of relatively great length (of which only a portion is shown in Fig. 1), the depth and thickness of the beam or bar 9 of the floor-
10 section being made suitable for the length of the same.

Having thus described our invention, we claim—

1. In a grate mechanism, the combination
15 with means for carrying the floor-sections, of a series of furnace-floor sections, each having at the opposite sides thereof, respectively, perforated upper and lower furnace-floor plates set at different elevations in parallel planes
20 to bring the upper plate of one floor-section over the lower plate of the adjacent floor-section and form a double-plate furnace-floor, substantially as described.

2. In a grate-mechanism, the combination
25 with a series of connected chain-links, of a series of beams supported on said links, respectively, and each having an upper and lower floor-plate arranged respectively for over- and under-lapping the corresponding

opposite plates of adjacent beams, substantially as described. 30

3. In a grate-mechanism, the combination with a link-chain having beam-posts on successive links, of the successive beams removably secured to said posts and carrying over-
35 lapping floor-plates, substantially as described.

4. The improved grate-bar or floor-plate herein described, it consisting in two perforated connected plates or portions located
40 side by side at different elevations, substantially as described and for the purpose specified.

5. The herein described double-plate furnace-floor, it consisting of a series of off-set
45 overlapping sections each consisting of a perforated upper-plate and a lower plate set side by side in different planes, substantially as described.

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