

C. E. HOLT.
Grates.

No. 155,445.

Patented Sept. 29, 1874.

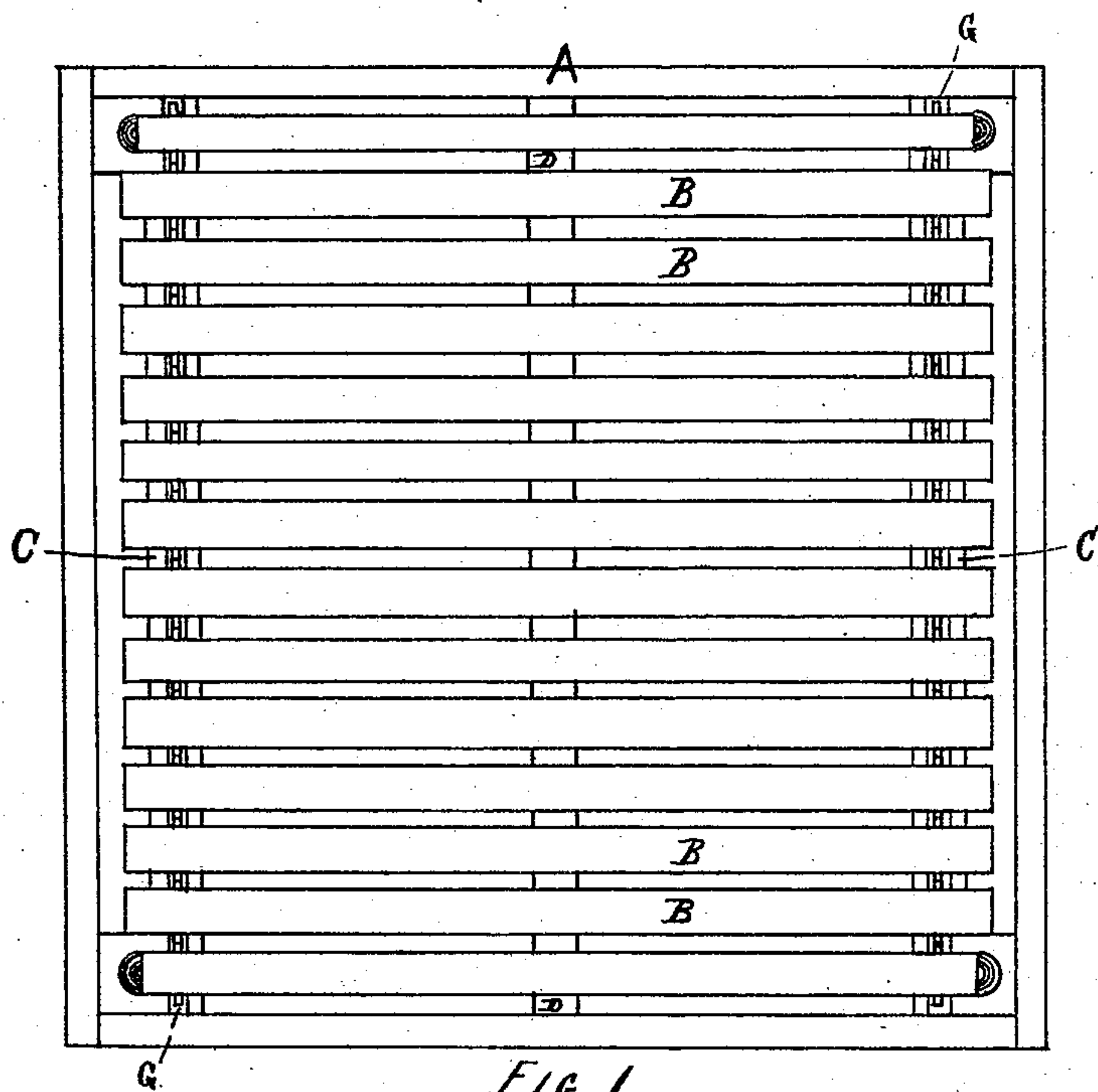


FIG. 1

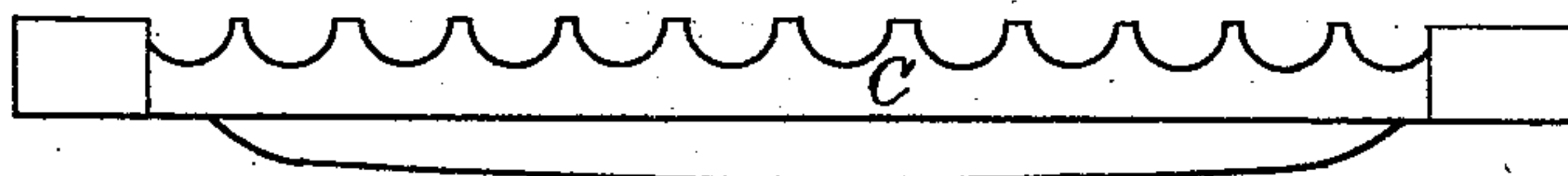


FIG. 2

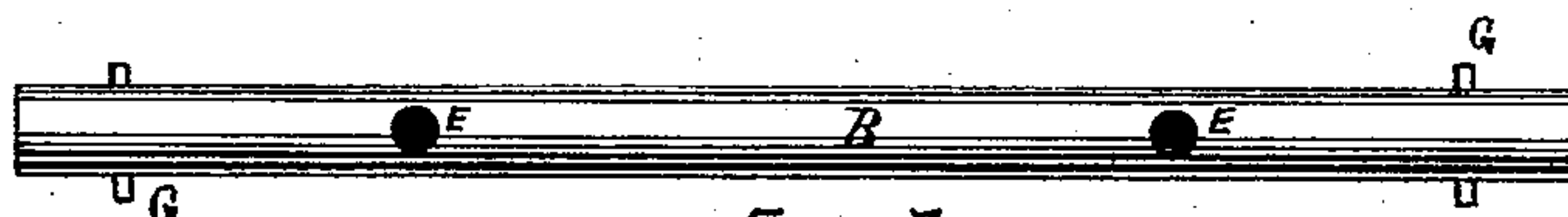


FIG. 3



FIG. 4

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CHARLES E. HOLT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. **155,445**, dated September 29, 1874; application filed March 20, 1874.

To all whom it may concern :

Be it known that I, CHARLES E. HOLT, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Grates, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains 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 plan of my improved grate. Fig. 2 is a view of the bar-rest; Fig. 3, a view of the under side of the bar; and Fig. 4, a cross-section, taken through the projection G.

Like letters refer to like parts in the different figures of the drawing.

My invention relates more especially to the grates used in the furnaces of steam-boilers, and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a cheaper and more durable grate is produced than is now in common use.

The distinguishing feature of my invention consists in a grate, the bars of which are constructed of short sections of gas or steam pipe, open at each end, and provided on their under sides with draft-apertures, and with means to prevent the bars not only from revolving or turning in the rests, but from moving longitudinally, all as herein shown.

In Fig. 1, A is the frame or fire-pot of the furnace; B B B B, the grate-bars supported at each end in the serrated rests C C, better seen in Fig. 2. The bars are constructed of gas or steam pipe, the ends being left open, and are provided with perforations on the under side, as shown at E E, Fig. 3. Each bar or section of pipe has two dogs or studs, G G,

projecting at right angles to the body of the pipe near the ends. These projections, when the bars are in position to form the grate, as in Fig. 1, fall into transverse grooves in the face of the teeth of the bars C C, and thus act not only to prevent the bars from turning, but also from slipping longitudinally, by which the ends would be brought into contact with the frame A, and the draft of air through the bar stopped or impeded.

It is well known that much trouble is experienced in ordinary grates, caused by the clinkers clogging up the draft-spaces, and by the grate-bars burning out from overheating—difficulties which are largely obviated by my invention. The external formation of the bars B B is such as to prevent the clinkers from readily adhering to them, while, being hollow and open at each end, there is a constant draft of cold air from the draft damper or register of the furnace through the apertures E E, by which they are kept comparatively cool, and prevented from burning out as rapidly as would otherwise be the case; the air after passing through the tubes also serving to aid the combustion of fuel, in the usual manner.

Having thus described my invention, what I claim is—

The furnace-grate described, formed of sections of gas or steam pipe, provided with the apertures E E and studs G G, supported in the serrated rests C C, the teeth of which rests are transversely grooved to receive the studs G G, substantially as and for the purpose specified.

CHARLES E. HOLT.

Witnesses:

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