

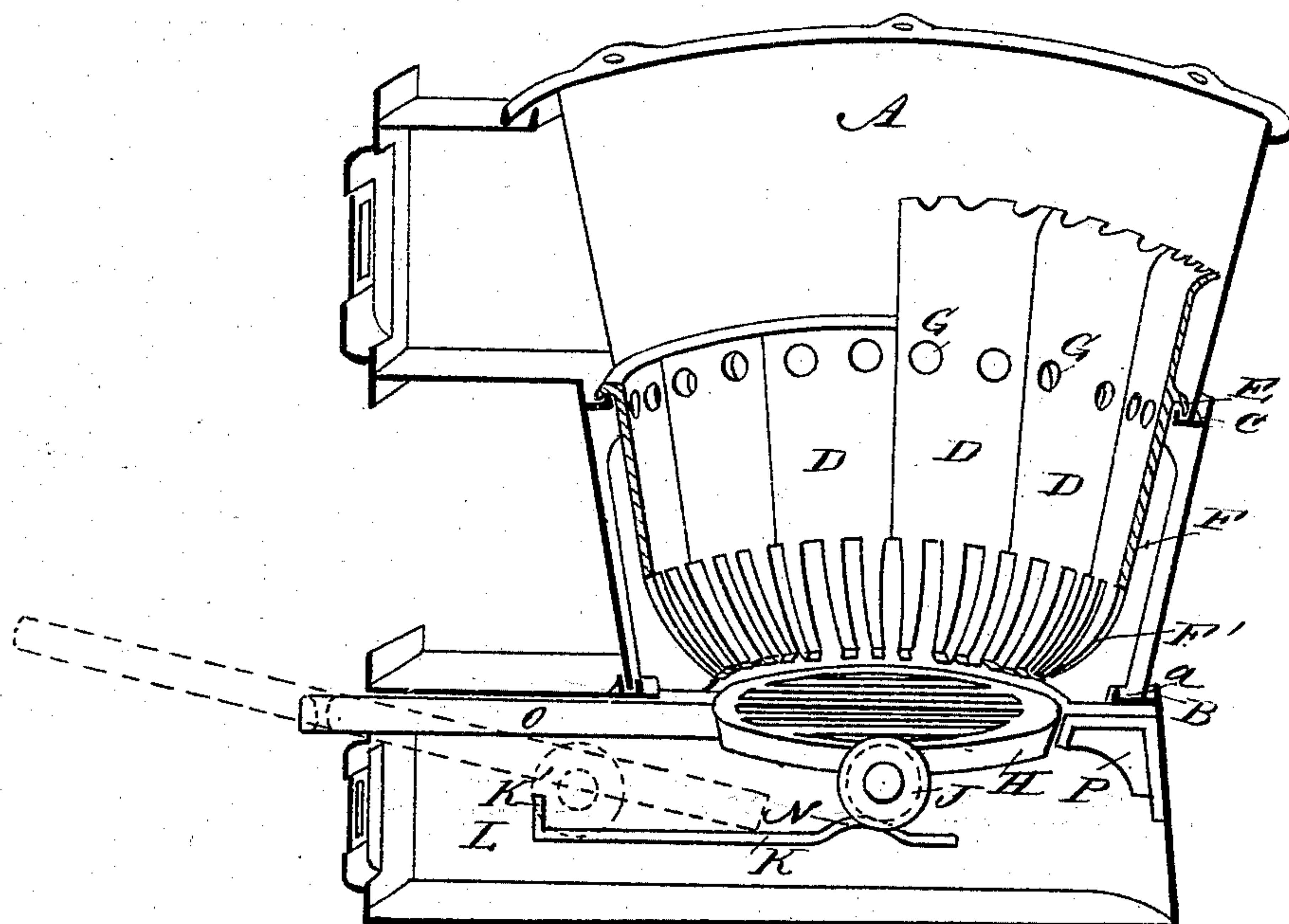
(No Model.)

D. W. ROBB.  
HEATING FURNACE.

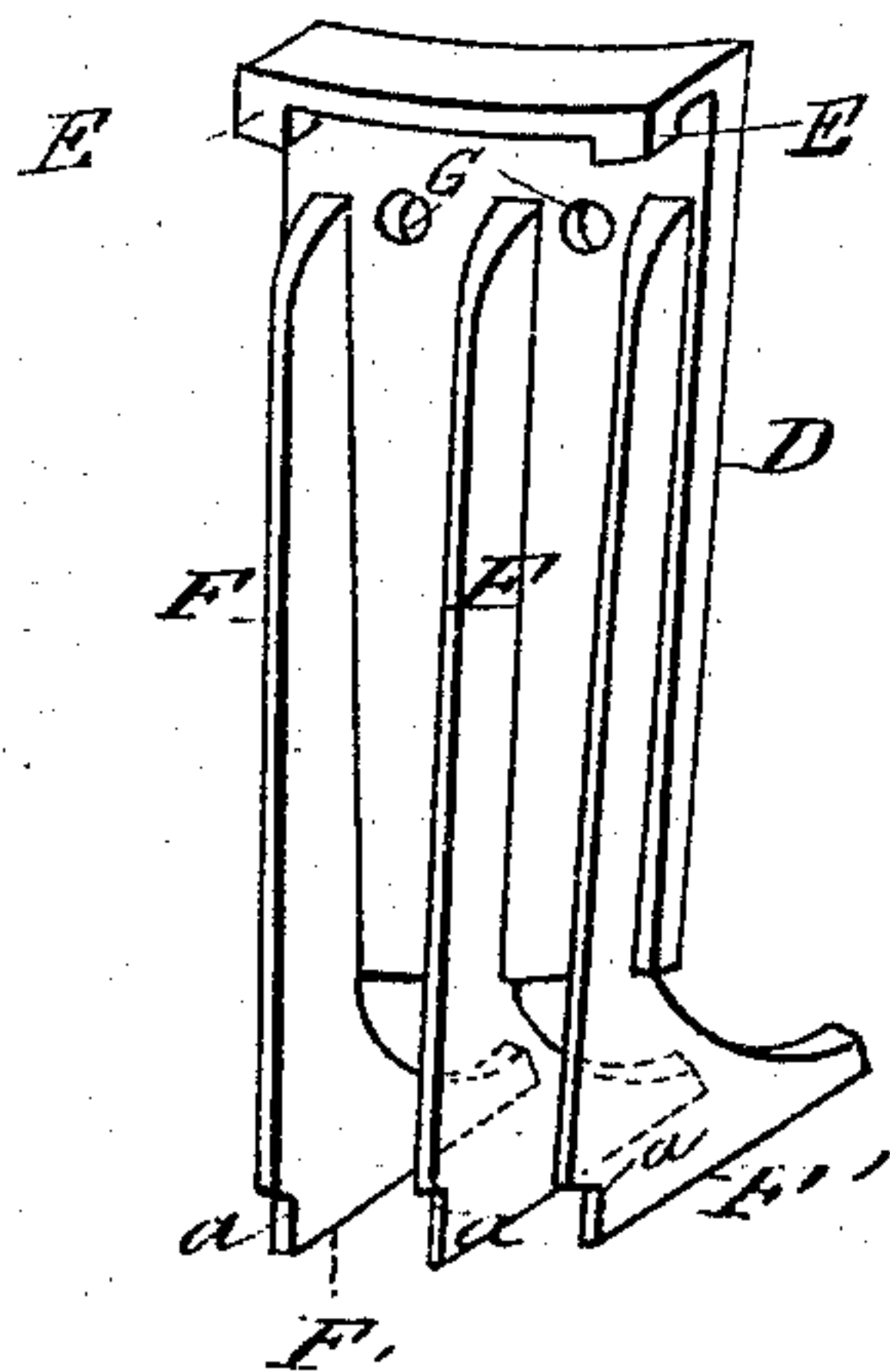
No. 270,127.

Patented Jan. 2, 1883.

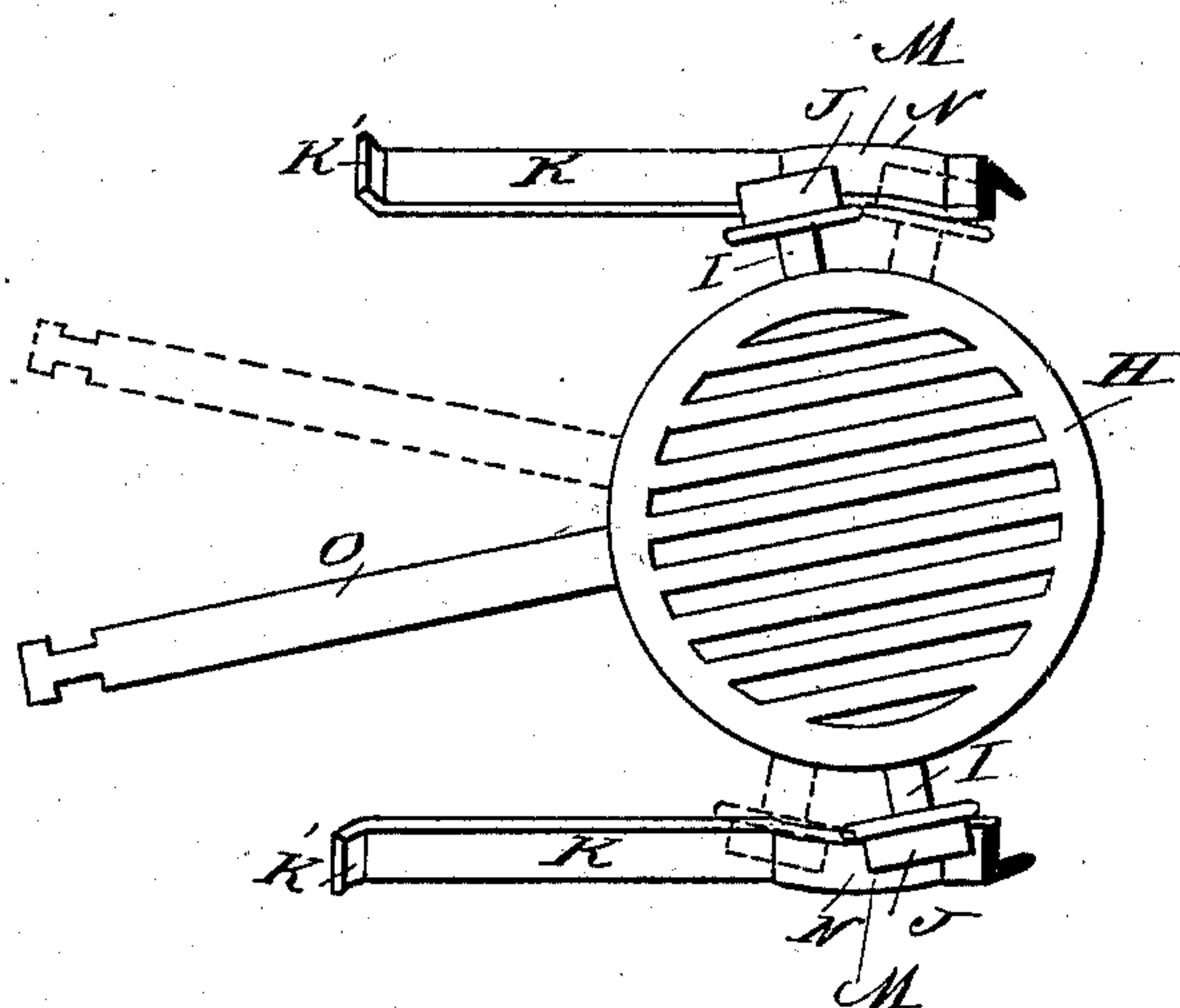
*Fig. 1*



*Fig. 3*



*Fig. 2*



WITNESSES:

*C. Neveu*  
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# UNITED STATES PATENT OFFICE.

DAVID W. ROBB, OF AMHERST, NOVA SCOTIA, CANADA.

## HEATING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 270,127, dated January 2, 1883.

Application filed June 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID W. ROBB, of Amherst, Nova Scotia, Canada, have invented a new and useful Improvement in Heating-Furnaces; of which the following is a full, clear, and exact description.

The object of my invention is to provide a sufficient quantity of air to the fuel, and to prevent a hinderance of the draft by the formation of clinkers.

The invention consists in a lining for a fire-pot formed of a series of sections provided with ribs forming downwardly-projecting prongs which are curved inward, which sections are hung by suitable hooks on internal flanges of the fire-pot.

The invention further consists in the combination, with the grate, of flanged wheels which run on rails below the grate, which rails have lateral curvatures, which are also curved upward, all as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional perspective view of a fire-pot provided with my improved lining and grate. Fig. 2 is a detail plan view of the same. Fig. 3 is a detail perspective view of one of the lining-sections.

The fire-pot A is provided with inwardly-projecting angular hook-projections or flanges B and C at the bottom and middle of the height of the fire-pot, respectively. The lining of the fire-pot is formed of a series of sections, D, each provided on the rear side with a hook-projection, E, for catching on the upper annular flange, C. One or more longitudinal ribs, F, projects from the rear side of each section D, and these ribs project below the lower edge of the sections D, and thus form a series of prongs, F', which have the lower parts of the inner surfaces curved inward—that is, toward the center of the bottom of the fire-pot—so that the lower part of the inner surface of the lining of the fire-pot will converge toward the center of the fire-pot, as is shown in Fig. 1. As the outer edges of the ribs F are carried straight down, the width of the lower ends of the prongs will be much greater than the width of the ribs. Each prong is

provided, at its lower end in the outer surface, with a notch or recess, a, into which the lower annular flange, B, passes.

Each section D of the lining is provided with a series of apertures, G, to permit air to pass into the upper layers of fuel in the fire-pot. The lining of the fire-pot forms a kind of basket, the lower inwardly-projecting prongs, F', of which hold the fuel in place.

The grate H is provided with two opposite pivots, I, on which flanged wheels J are loosely mounted, which wheels rest on longitudinal rails K in the ash-box L. These rails are each provided with a segmental outward curve, M, at the sides of the bottom of the fire-pot, which curves are directly opposite each other. At the laterally-curved parts these rails also have an upward curve, N. The grate is provided with a suitable handle, O, projecting from the end of the ash-box, which handle can be operated by a suitable lever or grate-shaker. The front ends, K', of the rails K are bent upward to prevent drawing the wheels J off the rails, and the rear end of the fire-pot is provided with a check-projection, P, to prevent pushing the grate too far back under the fire-pot.

The operation is as follows: By providing the sections of the lining with the ribs F air-spaces will be formed between the lining and the fire-pot. The air can pass through the slots between the prongs F' into the fuel, and air can pass through these apertures G to the upper part of the fuel, which air mingles with the heated gases. Furthermore, a circulation of air is kept up between the lining and the shell or fire-pot, whereby the lining will be preserved. The ribs F strengthen the linings and prevent warping of the same.

The grate H can be rotated in the horizontal plane by means of the handle O, the wheels running on the curves M, and at the same time the grate is worked up and down, as the track is also curved upward at N. This shakes the grate thoroughly and agitates the fuel, so that all the ashes, cinders, &c., will drop through it. The grate can be drawn forward on the rails K for the purpose of removing the clinkers from the grate. The fuel is retained in the fire-pot by the inwardly-curved lower ends of the prongs F'.

Having thus fully described my invention,



I claim as new and desire to secure by Letters Patent—

1. The combination, with the fire-pot A, provided with the inwardly-projecting annular  
5 flanges B C, of the lining-sections D, provided with hook-projections E, and with ribs F, having the lower ends curved inward, and having notches *a* in the lower ends of the outer  
10 edges, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the fire-pot A and the grate H, of the flanged wheels J, mounted on the grate, and the rails K, substantially as  
15 herein shown and described, and for the purpose set forth.

3. The combination, with the fire-pot A and

the grate H, of the flanged wheels J, mounted on the grate, and the rails K, provided with lateral curvatures M, substantially as herein  
shown and described, and for the purpose set forth. 20

4. The combination, with the fire-pot A and the grate H, of the flanged wheels J, mounted on the grate, and the rails K, provided with lateral curvatures M, which are also curved  
25 upward, substantially as herein shown and described, and for the purpose set forth.

DAVID W. ROBB.

Witnesses:

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