

No. 637,732.

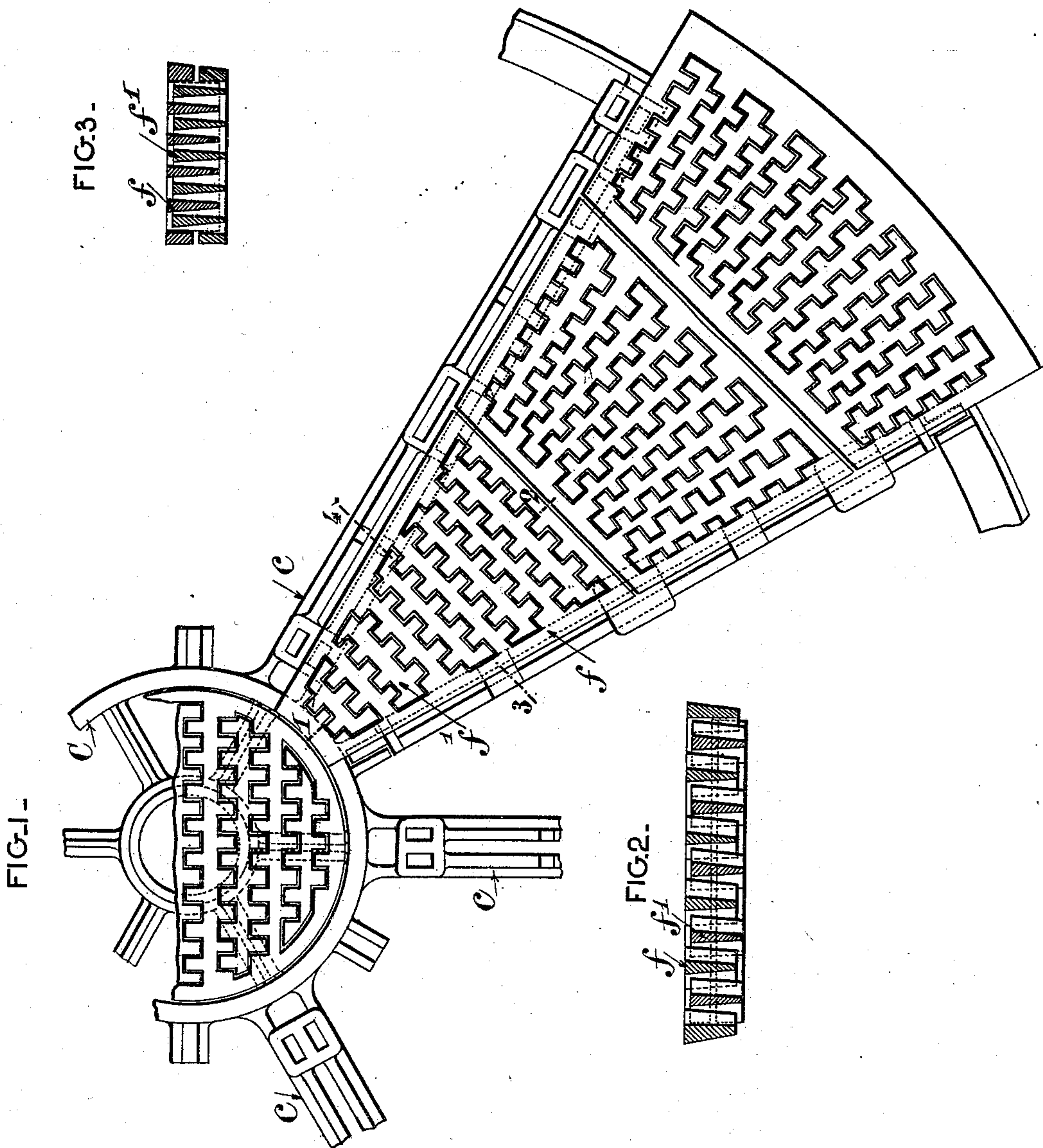
Patented Nov. 21, 1899.

C. GROLL.
ROTARY GRATE FOR FURNACES.

(Application filed Apr. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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FIG. 4—

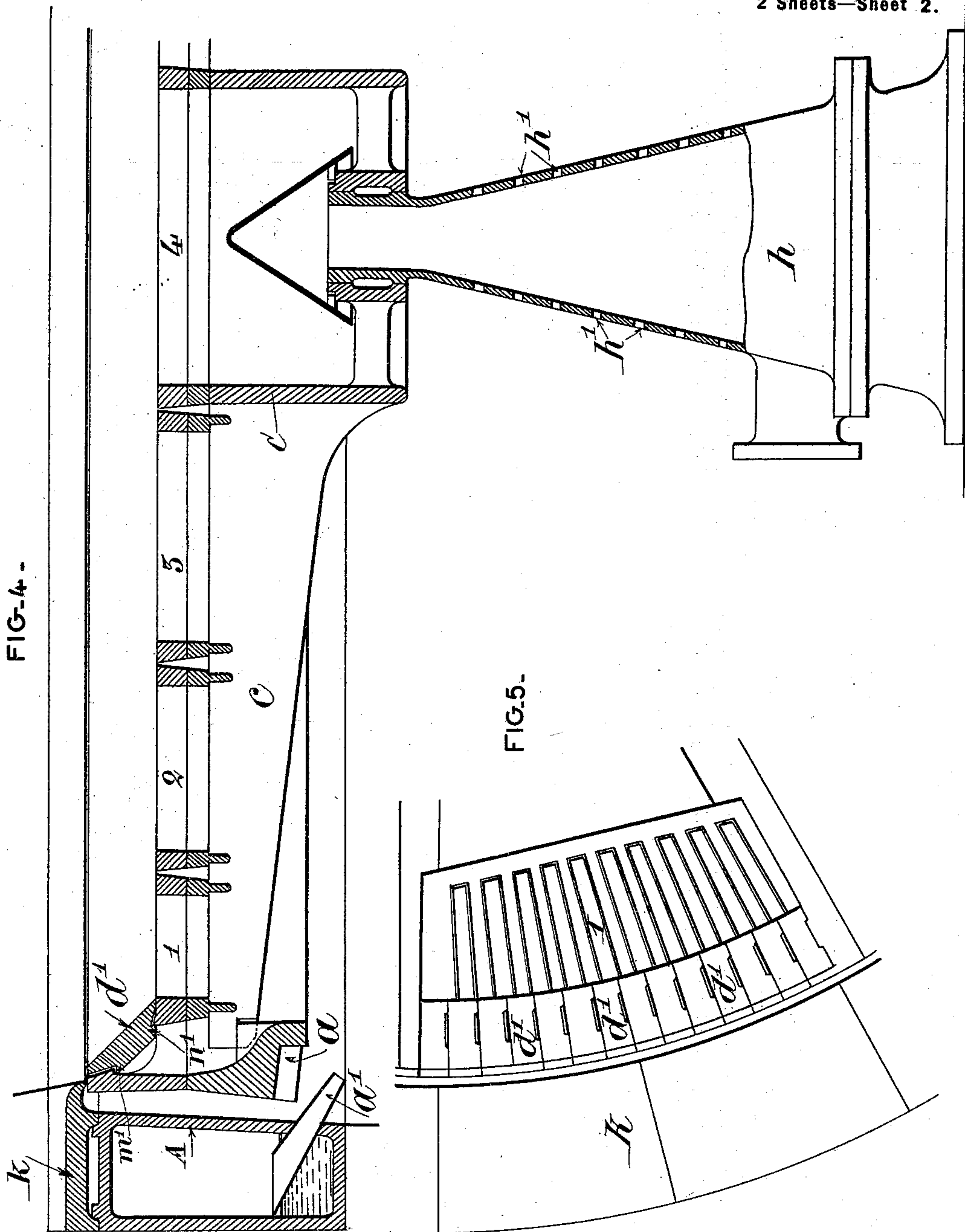
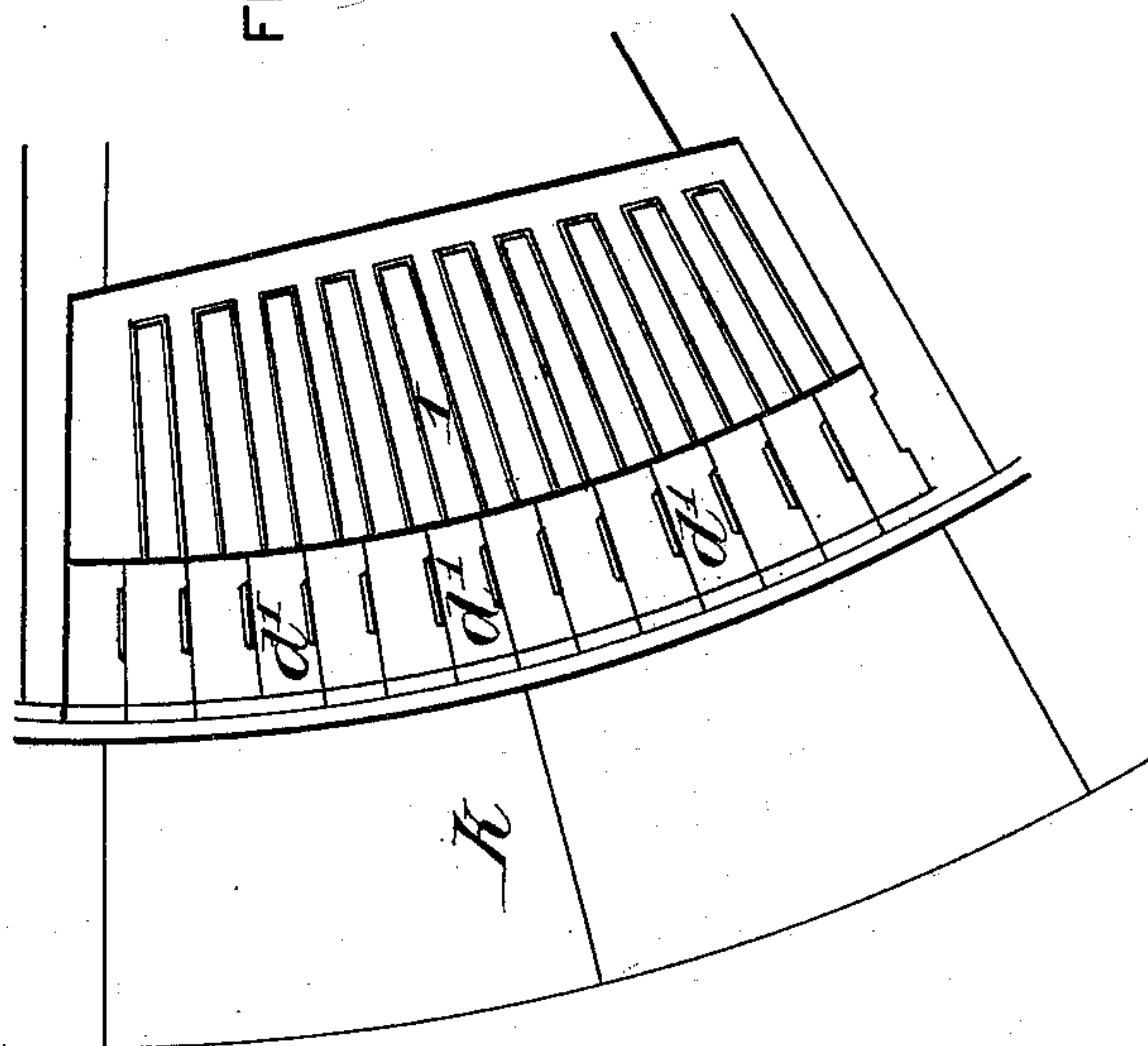


FIG. 5—



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UNITED STATES PATENT OFFICE.

CHARLES GROLL, OF ROUBAIX, FRANCE.

ROTARY GRATE FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 637,732, dated November 21, 1899.

Application filed April 8, 1898. Serial No. 676,852. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GROLL, of Roubaix, in the Republic of France, have invented new Improvements in Rotary Grates for Furnaces, of which the following is a specification.

My invention relates to several improvements in that class of smoke-consuming furnaces in which the combustible is automatically distributed onto a grate having a rotary movement which is either continuous or intermittent.

My invention has more particularly for its object improvements in the rotary grate described in the United States patent granted me on March 2, 1897, No. 578,146.

One of the objects of my invention is to so form the bars of the rotary grate as to obtain for the passage of the air a series of broken passages, the effect of which is to increase the division of the said air.

I have shown in the accompanying drawings the above-mentioned improvements and modifications.

In the said drawings, Figure 1 is a plan view of the grate of my smoke-consuming furnace, the said grate being composed of two series of plates fitting one another. Figs. 2 and 3 are sectional views on the lines 1 2 and 3 4, respectively, of Fig. 1. Fig. 4 is a vertical section of the grate, of its annular rim, and of the central standard. Fig. 5 is a plan view of a portion of the apparatus illustrated by Fig. 4.

The grate of my smoke-consuming furnace still rests on the radial arms *c* of a common hub *C*, the plates *f f'*, fitting one another, resting on suitable heels in a series of recesses in the arms *c*. The said plates, arranged one with regard to another, as shown in Figs. 1, 2, and 3, leave between them a series of sinuous passages, the effect of which is to divide the air passing through the layer of combustibles. The rim *A* of my grate, in one piece, is used as the forcing-pipe of a fan. This arrangement allows of the air escaping all around the grate and through a series of pipes *a'*, which may, for instance, be made integral with the rim of the grate. One may also pour into the said rim *A* and at the front of the furnace water, which, evaporating, is carried along by the current of air and hu-

mects the under side of the grate. The central standard or column *h*, supporting the grate, receives air from the same fan and spreads through numerous orifices *h'* in the ash-pit. These two arrangements allow of having a very uniform pressure in the ash-pit. The grate, composed, as described, of sinuous plates fitting one another and placed in series 1 2 3 4 on the said arms *c'*, rests at its circumference on a rack-rim *a*. For certain coal it is advantageous to lower the level of the grate with regard to the opening for cleaning operations *k*. For that purpose the plates of series No. 1 at the circumference rotating under the opening *k* are provided with a series of small bars *d'*, sufficiently inclined not to interfere with the cleaning operations and also carrying the heels *m' n'*, necessary for preventing displacement by the tools used by the fireman.

I claim—

1. A circular grate, comprising a central support, arms radiating therefrom, and grate-bars resting on said arms, each grate-bar consisting of two sections each of which is provided with a series of radially-disposed slots, the longitudinal edges of which are toothed or staggering, and with a series of radially-disposed solid portions located between the slots and having lateral projections to enter the slots of the mating section.

2. A grate, comprising a supporting-frame formed of a series of spokes rotating from a center, a central supporting-pivot therefor, grate bars or plates supported thereon, a ring carried thereby and extending about and above the grate-plates and having an inwardly-projecting and downwardly-facing shoulder near its upper edge, and a series of bars having shoulders upon their under sides adapted to engage the shoulder on said ring and the upper outer edge of the grate-plates, and forming an inclined grate-surface extending upwardly from the margin of the main grate.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES GROLL.

Witnesses:

ALFRED C. HARRISON,
L. ALEXANDRE.