

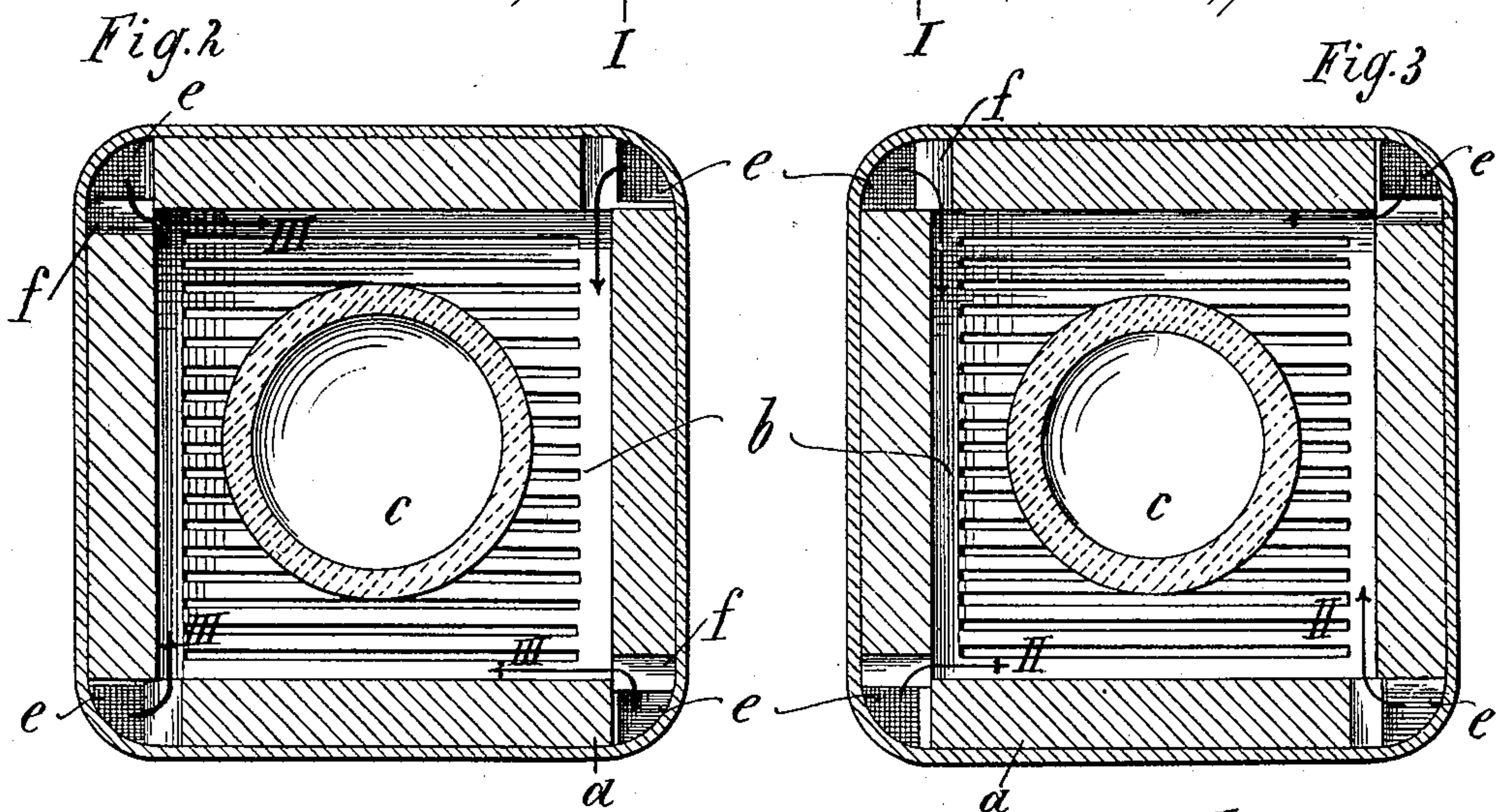
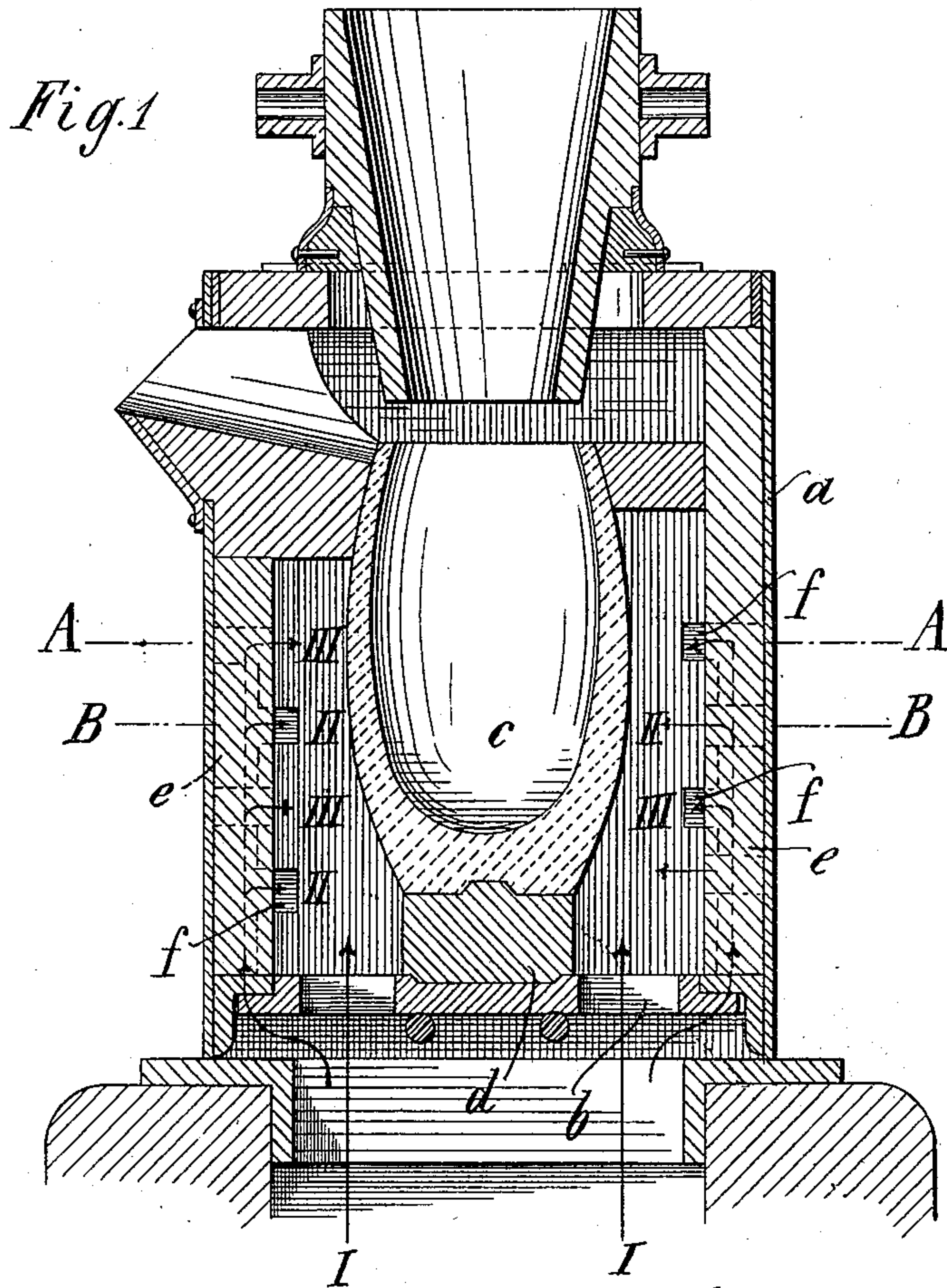
No. 644,270.

Patented Feb. 27, 1900.

R. BAUMANN.  
CRUCIBLE FURNACE.

(Application filed Mar. 18, 1899.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

RUDOLF BAUMANN, OF OERLIKON, SWITZERLAND.

## CRUCIBLE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 644,270, dated February 27, 1900.

Application filed March 18, 1899. Serial No. 709,597. (No model.)

*To all whom it may concern:*

Be it known that I, RUDOLF BAUMANN, a citizen of the Republic of Switzerland, and a resident of Oerlikon, near Zurich, Switzerland, have invented certain new and useful Improvements in Crucible-Furnaces, of which the following is a specification.

The object of the present invention is a new and improved means for conveying the blast into a crucible-furnace for the purpose of producing a very high and uniform heat.

The invention is shown in its principal parts on the accompanying drawings, in which—

Figure 1 is a vertical section through the center of the furnace. Fig. 2 is a horizontal section through same on line A A, and Fig. 3 one on line B B of Fig. 1.

In the accompanying drawings, *a* is a crucible-furnace of square or polygonal section. The blast is admitted to the interior through a grate *b* at the bottom. The crucible *c* rests on it either directly or by means of a crucible-stand *d*. The blast entering through the grate tends to pass the furnace in a straight way from the bottom to the top, as indicated by the arrows I.

In the corners of the walls forming the shaft of the furnace there are provided vertical channels *e*, closed at their upper ends, but communicating at their lower ones with the space underneath the grate. These channels communicate with the interior of the furnace by means of twyers *f*, through which the blast ascending the vertical channels gets access to the interior of the furnace. These twyers are directed horizontally and are arranged in different levels one above the other, their number being the same on all vertical channels *e*. They are arranged in such a way that the twyers opening from the same vertical channel *e* are directed alternately to one side or the other, the twyers of the same level of the different channels being all directed to cause a flow of air in the same direction around the walls of the furnace.

In the accompanying drawings all the lowest twyers blow, as indicated by arrows II,

in opposite direction in which the hand of the watch moves. All those of the next level blow, as indicated by arrows III, in same direction in which the hands of a watch move. In the third level their direction is the same as in the lowest one, and so on.

By the arrangement hereinbefore described a very brisk combustion takes place throughout the whole furnace, the twyers always furnishing fresh air also to the higher regions of the furnace. The current of the air entering through the twyers meets the ascending current at right angles, thereby producing a perfect mixing of the products of the combustion with fresh air and therefrom a perfect combustion. Even in the higher levels of the furnace the combustion is as active as the lower ones, and a perfectly-uniform heat is to be found throughout the whole shaft of the furnace.

By using a furnace of rectangular cross-section square or like corners are formed, and from the air-passages in these corners the air may be readily discharged in various directions.

What I claim is—

1. In combination in a crucible-furnace having a shaft rectangular in cross-section, the grating at the lower part of the shaft, the crucible and the air-passages in the corners of the shaft with horizontal twyers extending from the several corners in different directions, substantially as described.

2. In combination in a crucible-furnace, the shaft having the corners, the passages located at the corners and having twyers located at different levels, those of one level being directed to discharge the air in one direction around the shaft and those of the next level discharging the air around the shaft in the other direction, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLF BAUMANN.

Witnesses:

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