

No. 664,473.

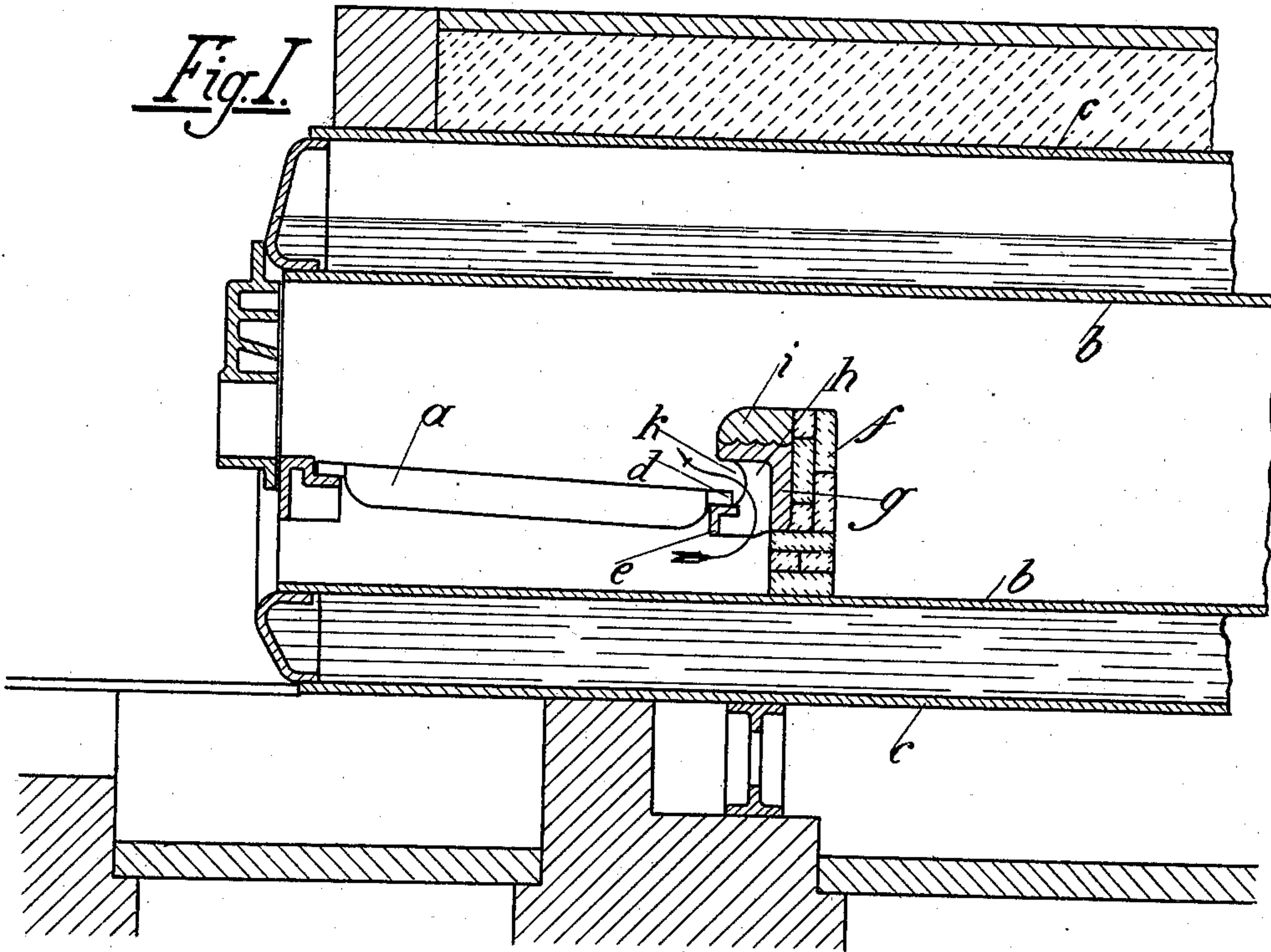
Patented Dec. 25, 1900.

C. W. FLEISCHMANN & K. FISCHER.  
STEAM BOILER FURNACE.

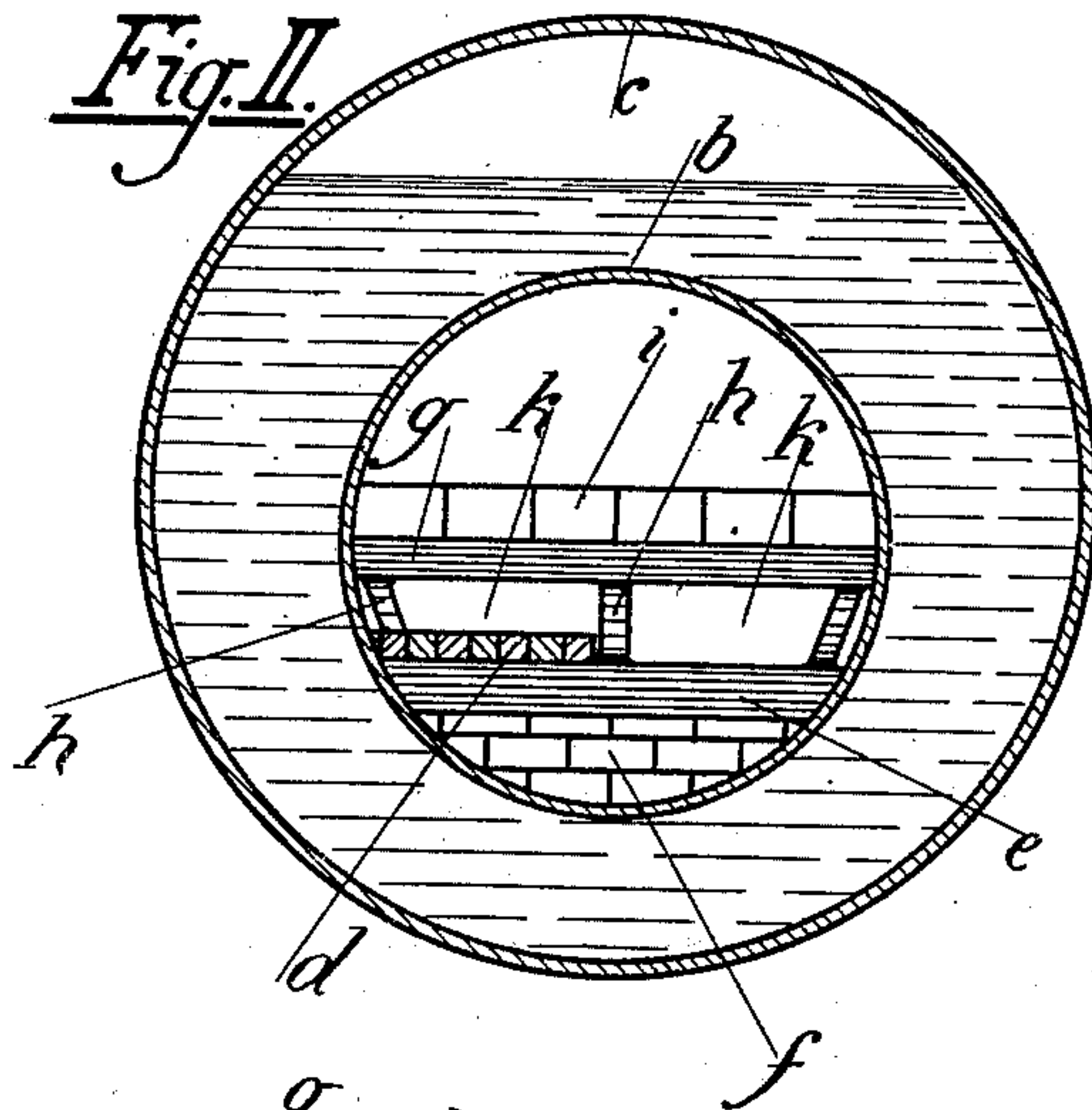
(Application filed Aug. 17, 1900.)

(No Model.)

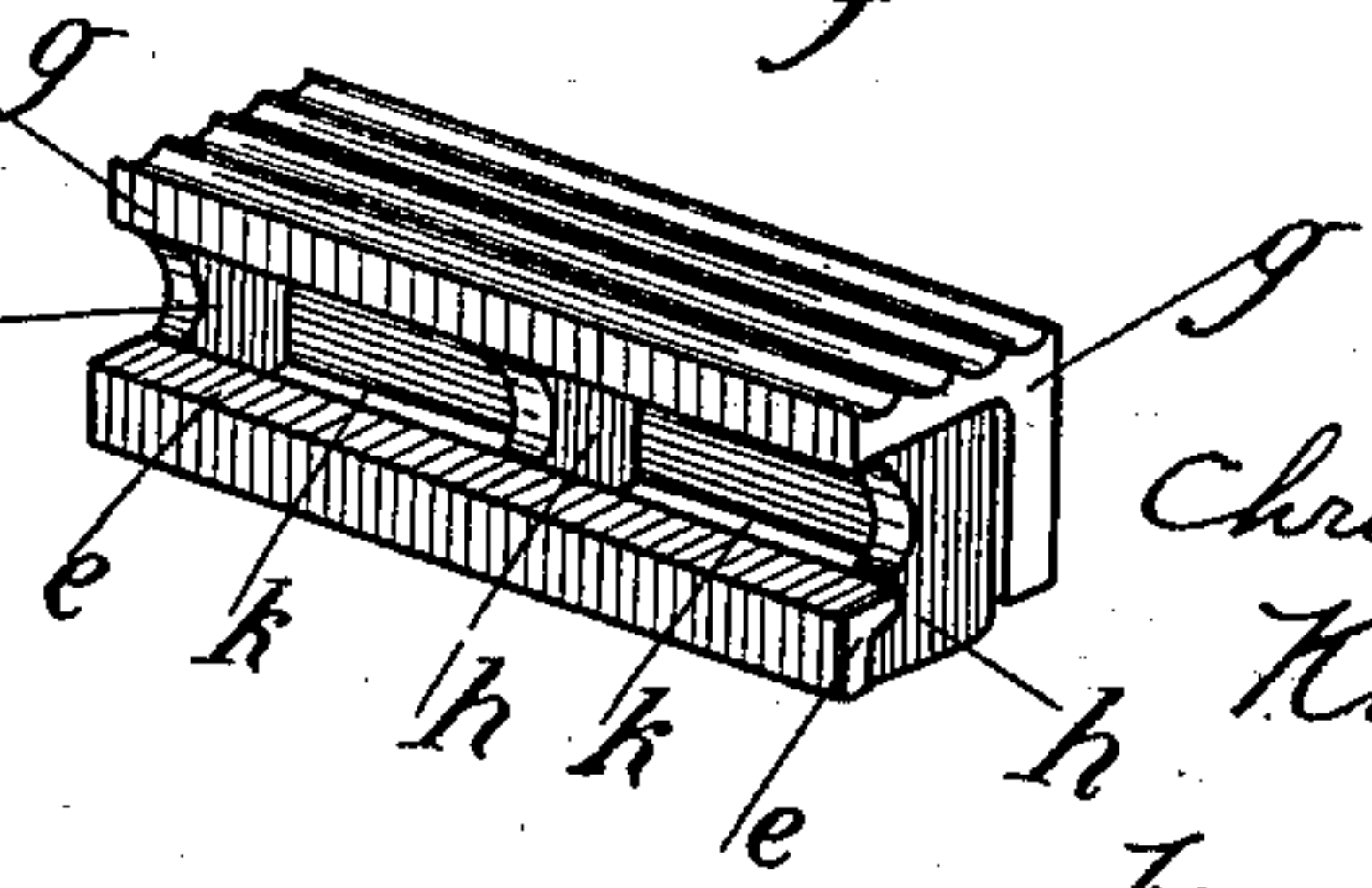
*Fig. I.*



*Fig. II.*



*Fig. III.*



Attest  
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# UNITED STATES PATENT OFFICE.

CHRISTIAN WILHELM FLEISCHMANN, OF NUREMBERG, AND KARL FISCHER,  
OF SULZBACH, GERMANY.

## STEAM-BOILER FURNACE.

SPECIFICATION forming part of Letters Patent No. 664,473, dated December 25, 1900.

Application filed August 17, 1900. Serial No. 27,186. (No model.)

*To all whom it may concern:*

Be it known that we, CHRISTIAN WILHELM FLEISCHMANN, residing at Nuremberg, and KARL FISCHER, residing at Sulzbach, Germany, subjects of the King of Bavaria, have invented certain new and useful Improvements in Steam-Boiler Furnaces, of which the following is a specification.

The present invention relates to steam-boiler furnaces, and has for its object to obtain an after-burning, and thereby a consumption, of the smoke before it reaches the fire-bridge. This is attained by providing the fire-bridge with a support for the grate, which support is provided above the heads of the grate-bars with a slot extending nearly over the whole width of the grate. The said slot connects the space lying below the grate with the fireplace of the boiler and serves for leading the air immediately below the boiler and before the fire-bridge. In that the air taking this way is moved against the gases, being in most cases incompletely burned, it is mixed with the gases, so that an effective after-burning of the same is obtained.

In order to render the present specification more easily intelligible, reference is had to accompanying drawings, in which—

Figures 1 and 2 are longitudinal and cross sections, respectively; and Fig. 3, a perspective view of the support for the grate.

The grate-bars *a* are arranged within the flame-tube *b* of the boiler *c* and rest with their rear ends *d* upon a support *e*, which projects from the part *g*, walled into the fire-bridge *f*. The support *e* is connected with the part *g* by ribs *h* or the like. The upper edge of the part *g* extends above the heads of the grate-bars in such a manner as to leave the slots *k k* free, such slots extending over the whole width of the grate. A part of the air below the grate may pass through the said

slots in the direction of the arrows and be led below the boiler and before the fire-bridge, where the air is mixed with the gases, being partly burned on the grate *a* and passing the fire-bridge, so that an after-burning of the same is effected. The frame-like-formed part *g*, which is shown in Fig. 3 and which may be of cast-iron or of forged iron, has a ribbed surface, which increases the strength of the same and, furthermore, serves for attaining a solid adhering of the wall form the projection *i* of the fire-bridge. The slots *k k* may also serve for removing the slag and ash residues, so that there is no difficulty in cleaning the grate. The back of the piece *g* is of right-angular formation in cross-section.

We claim as our invention—

1. A support for the grate-bars of a steam-boiler furnace consisting of the part *g* adapted to extend from side to side of the fire-bridge and be supported thereby, said part *g* having ribs *h* projecting forwardly and forming slots for the admission of air and a ledge or projection *e* carried and supported by the said ribs and adapted to support the grate-bars, substantially as described.

2. In combination with the fire-bridge, of a steam-boiler furnace, the part *g* having the back piece of right-angular formation and supported by the fire-bridge wall, a ledge or projection *e* for supporting the grate and the ribs extending forwardly from the part *g* and supporting the said ledge, said ribs forming slots between the ledge and part *g* for the admission of air, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CHRISTIAN WILHELM FLEISCHMANN.  
KARL FISCHER.

Witnesses:

WILHELM BREHN,  
A. SLICH.