(No Model.)

O. H. JEWELL & W. M. MATHISEN.

FURNACE GRATE.

No. 298,093. Patented May 6, 1884.

Fig. 1.

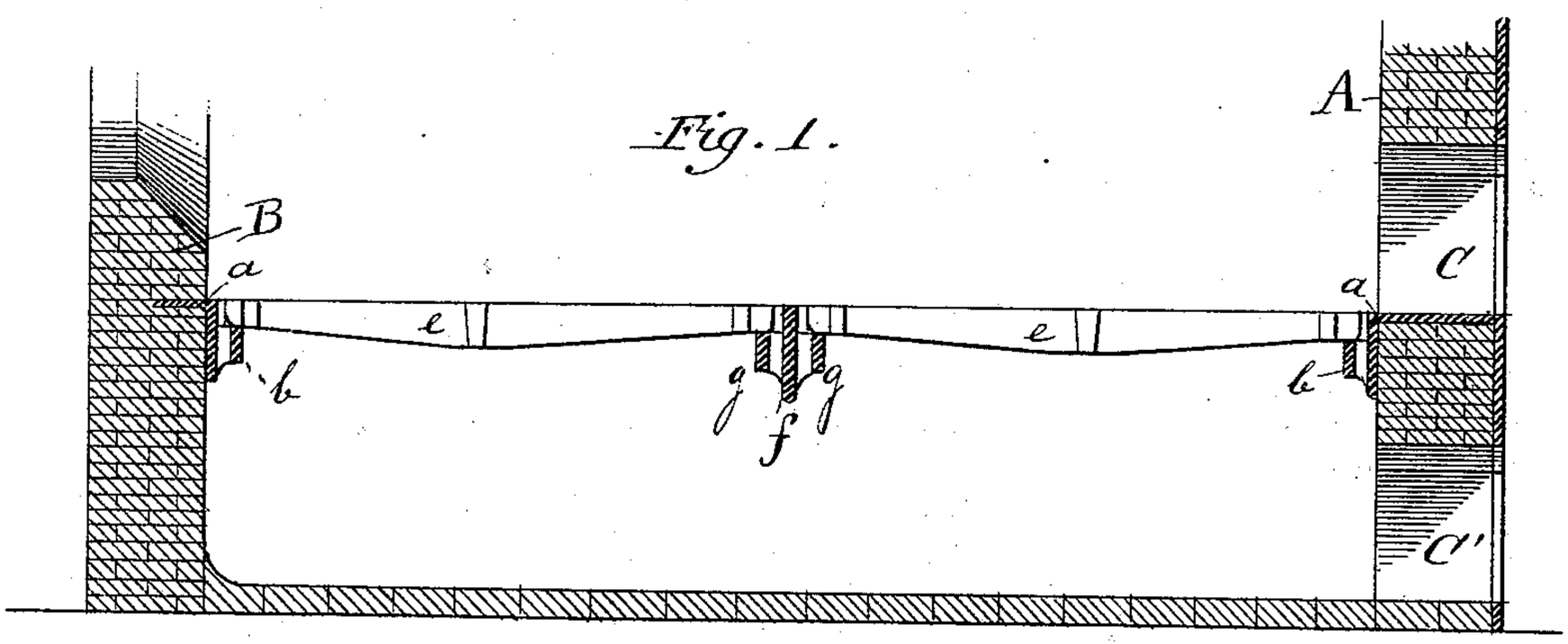

Fig. 2.

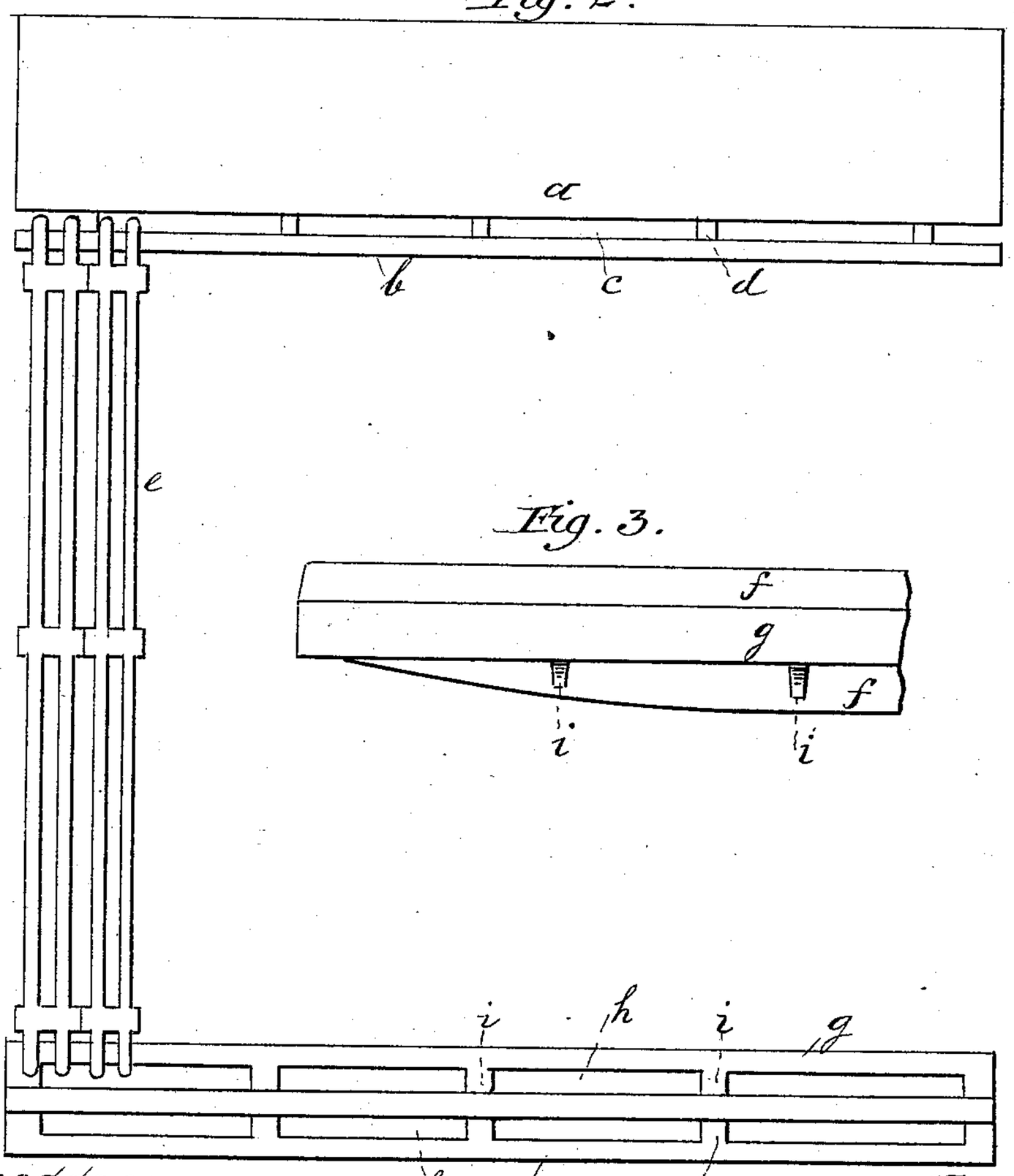

Fig. 3.

Witnesses:
Frank S. Blanchard
M. J. Burgett

Inventor:
Omar H. Jewell
William M. Mathisen
By Wm H Lotz
Attorney.

UNITED STATES PATENT OFFICE.

OMAR H. JEWELL AND WILLIAM M. MATHISEN, OF CHICAGO, ILLINOIS.

FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 298,093, dated May 6, 1884.

Application filed November 27, 1883. (No model.)

To all whom it may concern:

Be it known that we, OMAR H. JEWELL and WILLIAM M. MATHISEN, citizens of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Furnace-Grates, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to improvements in grate-bars, the object being to avoid the accumulation of ashes, &c., where the bars are connected with the front and bridge walls of the furnace, and, where double grates are used, when said bars are joined to the central support.

To the accomplishment of the above the invention consists of the novel devices and combination of devices to be described and claimed.

Reference will be made to the accompanying drawings, in which Figure 1 is a section through a furnace; Fig. 2, a plan showing the arrangement of the grate-bars, and Fig. 3 a side view of the central support for said grate-bars.

Like letters refer to like parts in each view.

A represents the front wall of the furnace; B, the bridge-wall of the same, and C C′ the fuel and ash-pit doors, respectively.

Secured to front wall, A, is an angle-iron, *a*, the horizontal part of which rests within the fuel-opening, while the vertical part rests against the inner face of said wall.

Cast with angle-iron *a* is a bar, *b*, cut away so as to form openings *c* between its inner edge and said angle-iron, said openings *c* being separated from each other by lugs *d*, as shown in Fig. 2.

To bridge-wall B a similar angle-iron is secured by the horizontal part thereof being inserted between the bricks thereof, as shown in Fig. 1. When a single grate is to be used, the ends of grate-bars E rest upon the bars *b*, and are of such length that there is a small space left between such ends and the front and bridge walls, thus allowing ashes, &c., to fall through spaces or openings *c* to the ash-pit. By the action of the heat the grate-bars are caused to contract and expand. When contracted, the openings *c* are entirely free, and when expanded the ashes, &c., are ground between the walls and the ends of the bars, and fall to the ash-pit, whereby all accumulation of ashes, &c., and the consequent clogging of the parts are avoided. When a double grate is used, a central support is employed, such support consisting of a central bar, *f*, two side bars, *g*, separated a sufficient distance from said central bar to form openings *h*, the several parts being connected by lugs *i*.

As shown in the drawings, the inner ends of the grate-bars rest upon the side bars, *g*, and in use the operation is the same as before described.

What we claim is—

1. The combination, with grate-bars *e*, of supports secured to the front and bridge walls A B, and consisting of angle-irons *a*, bars *b*, and connecting-lugs *i* and provided with openings *d*, as described and shown.

2. A central support consisting of a center bar, *f*, side bars, *g*, connected by lugs *i*, in combination with grate-bars *e* and the end supports described, said central and end supports adapted to support the ends of the grate-bars and provided with openings for the discharge of ashes, &c., as described and shown.

In testimony whereof we affix our signatures in presence of two witnesses.

OMAR H. JEWELL.
WILLIAM M. MATHISEN.

Witnesses:
M. J. CLAGETT,
LOUIS NOLTING.