

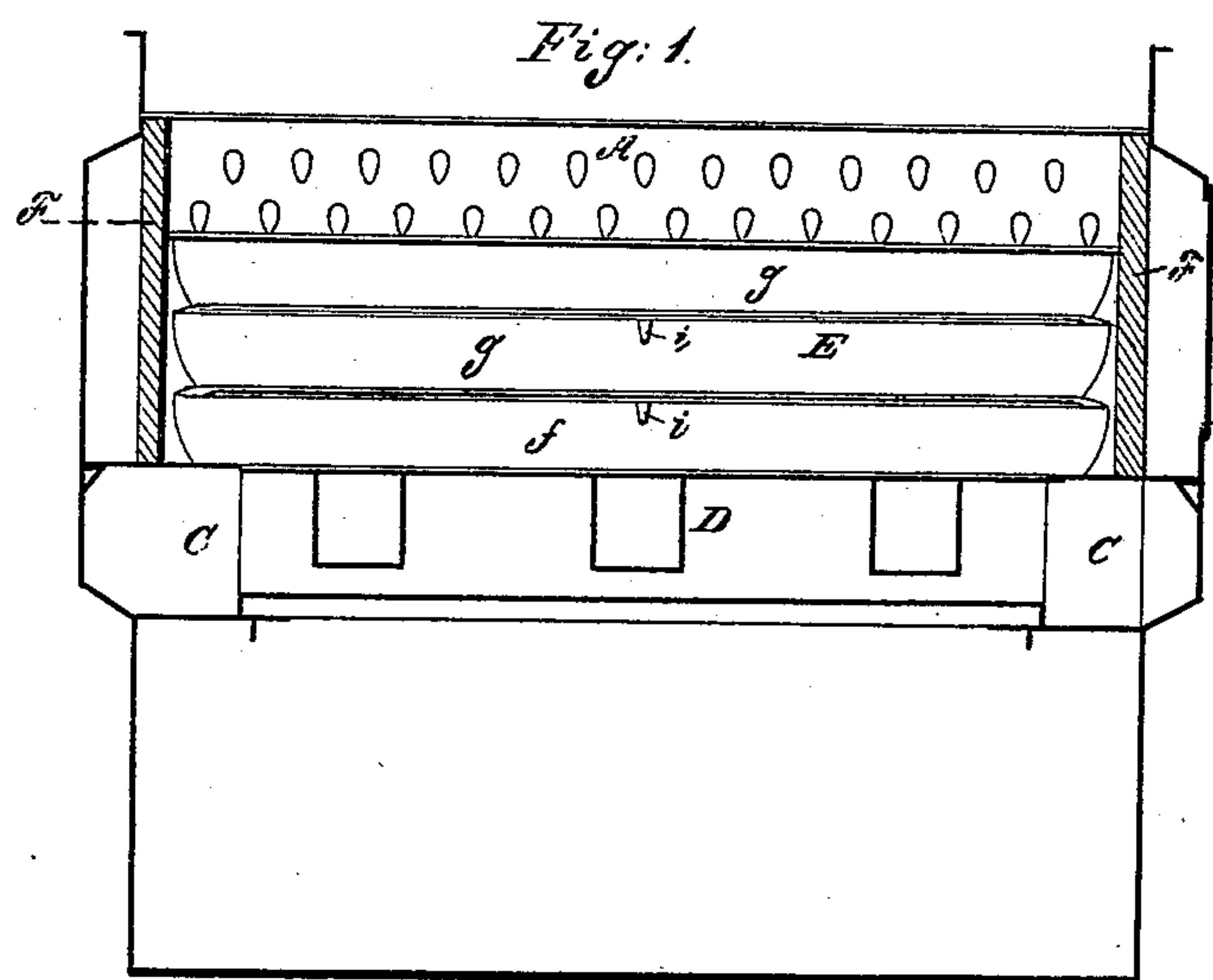
M. L. HORTON.

2 Sheets—Sheet 1.

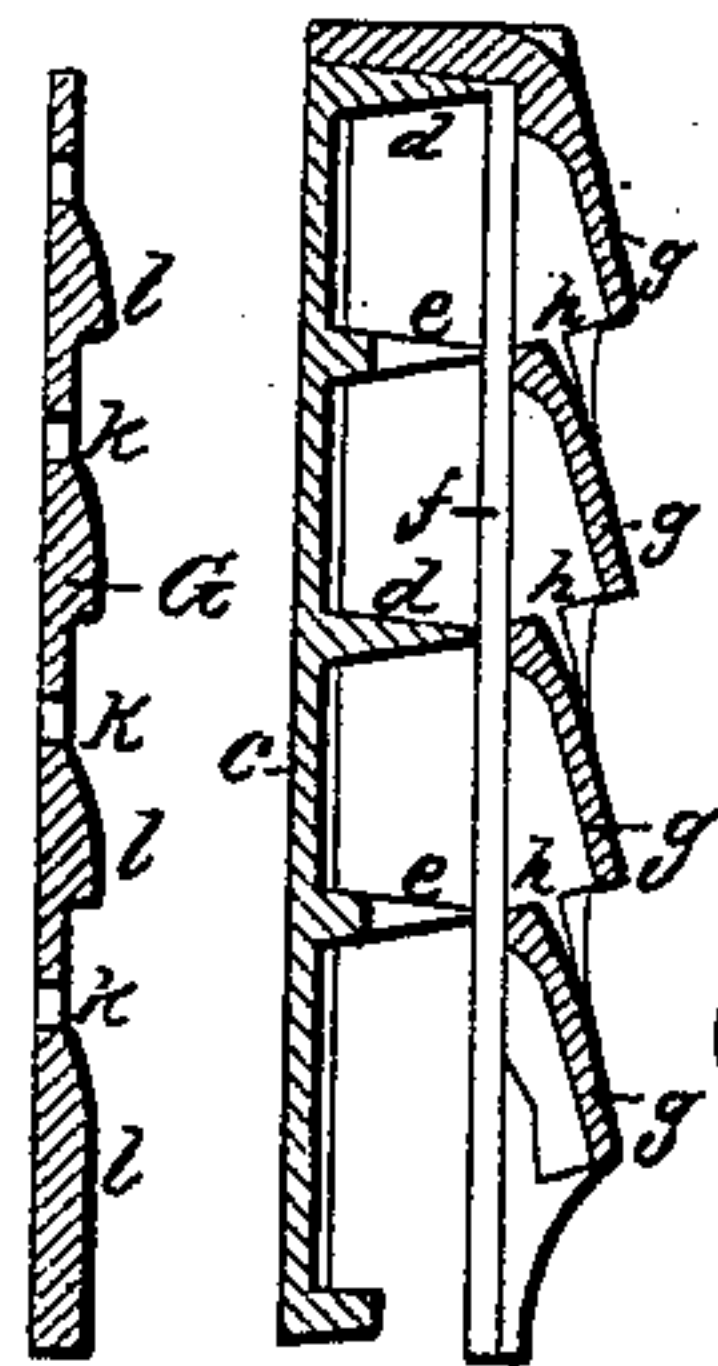
Fire Box for Stoves and Ranges.

No. 110,467.

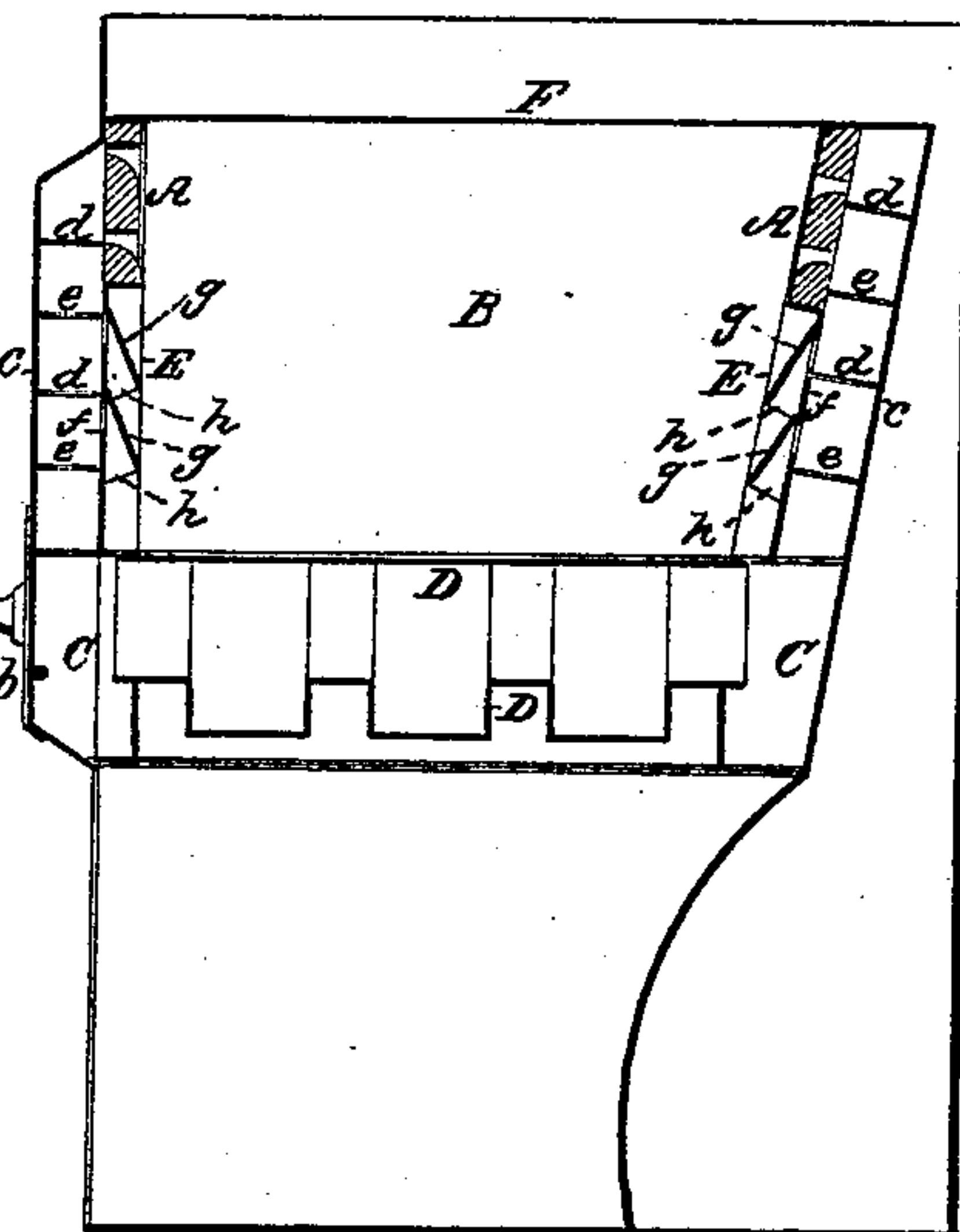
Patented Dec. 27, 1870.



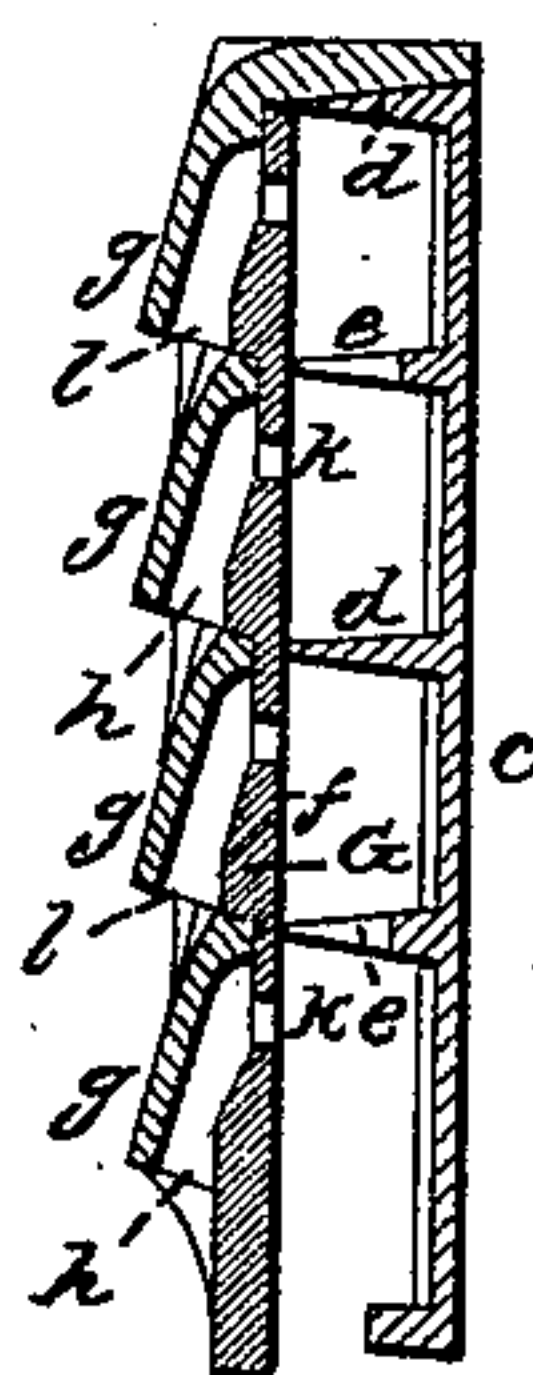
*Fig. 9. Fig. 8.*



*Fig. 2.*



*Fig. 7.*



Witnesses:

*S. N. Piper.*

*L. A. Möller.*

*M. L. Horton.*

*by his attorney.*

*R. H. Hedy*

M. L. HORTON.

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Fig. 3.

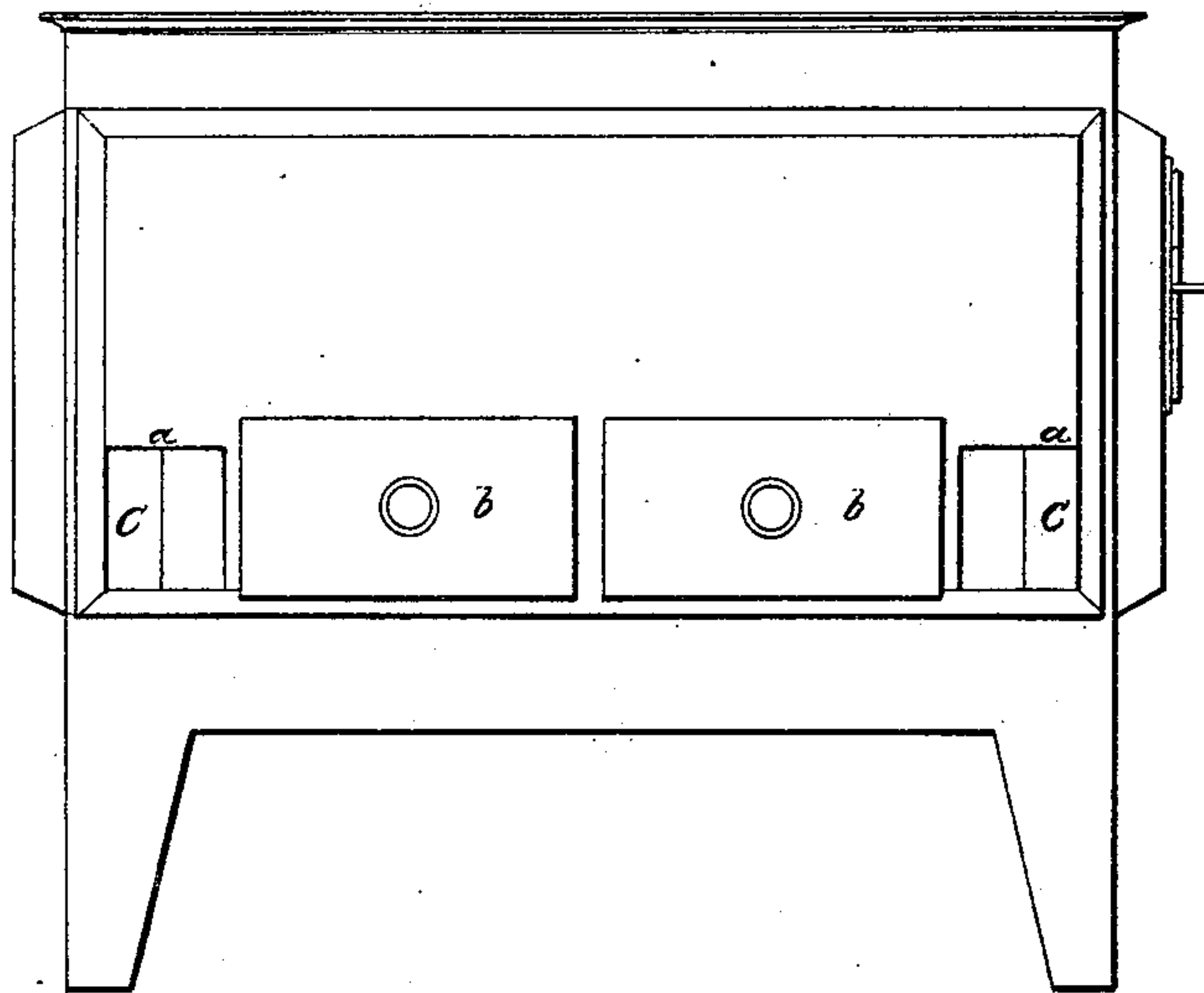


Fig. 4.

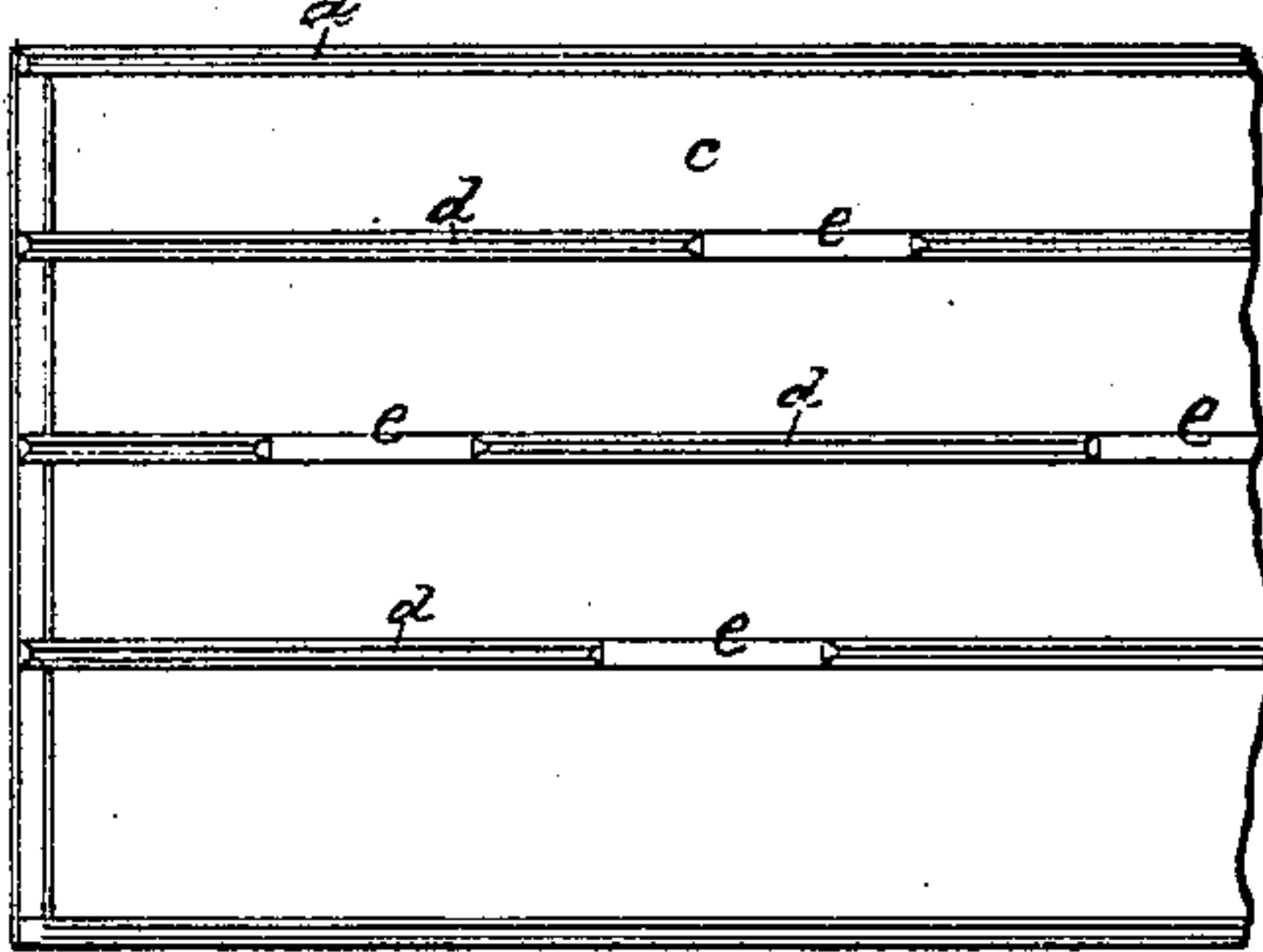


Fig. 5.

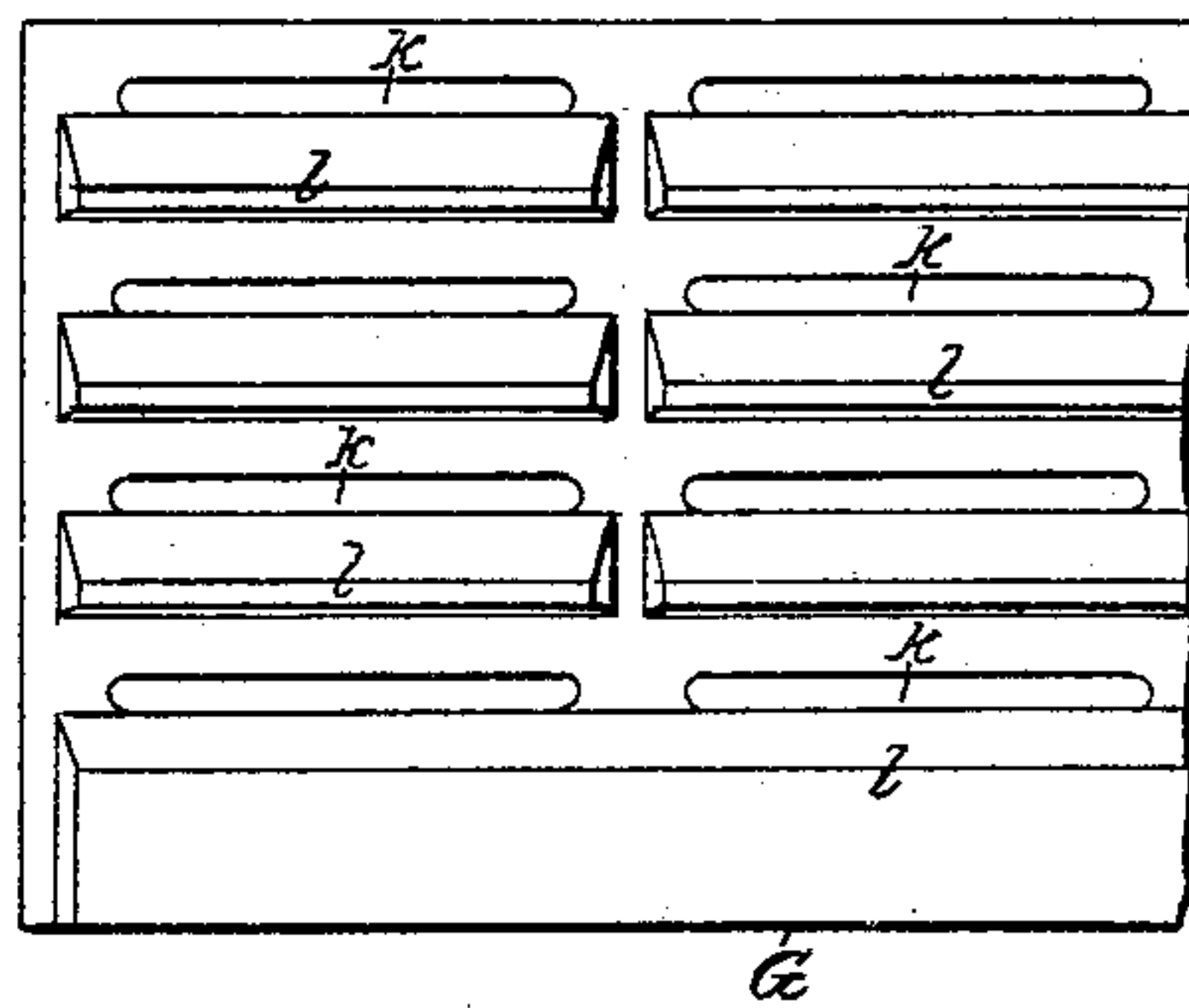
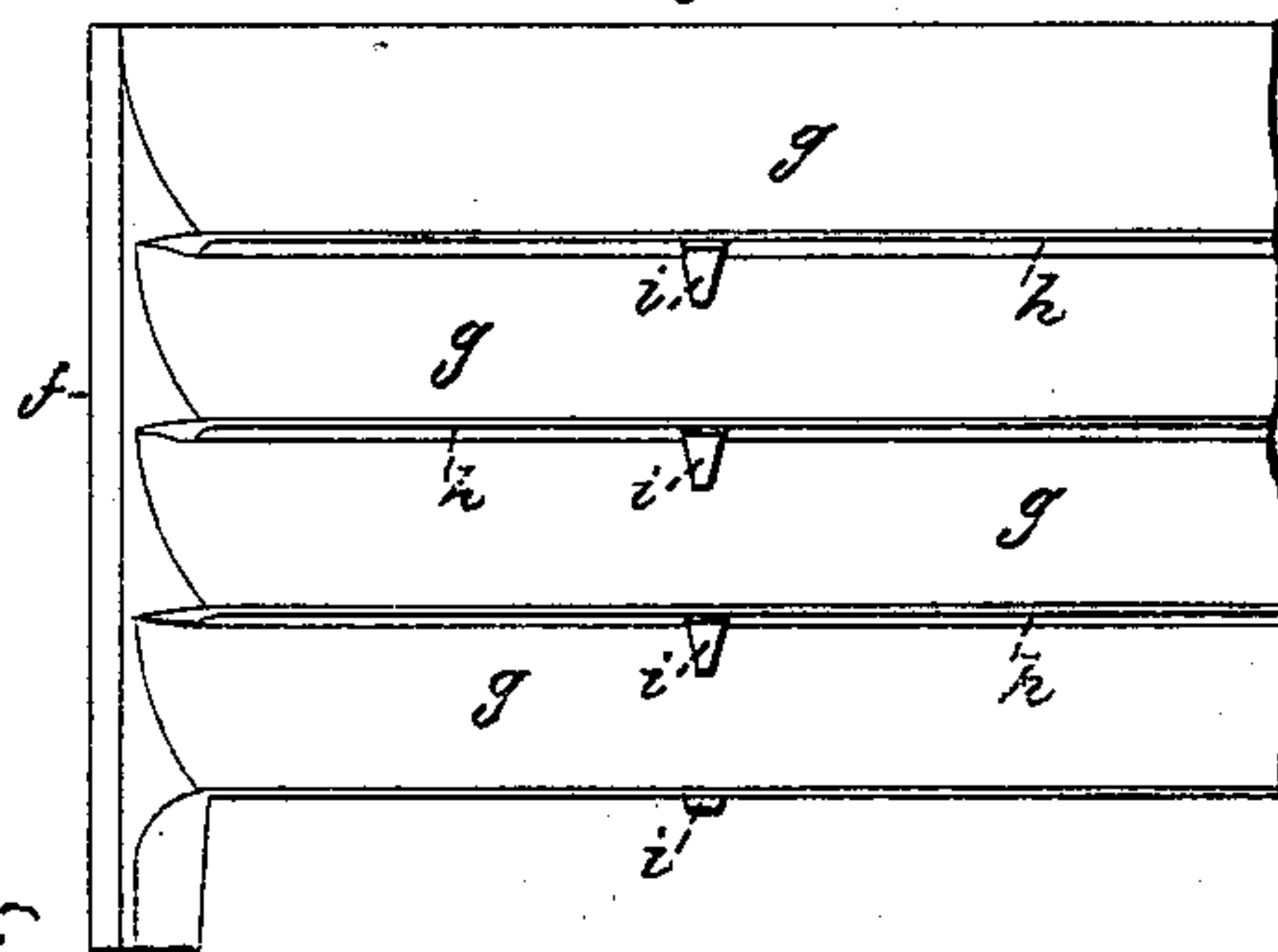


Fig. 6.



Witnesses.

S. A. Piper

L. A. Höller.

M. L. Horton.

by his attorney.

N. Hardy



# United States Patent Office.

MARCUS L. HORTON, OF WINDSOR, VERMONT.

Letters Patent No. 110,467, dated December 27, 1870.

## IMPROVEMENT IN FIRE-BOXES FOR STOVES AND RANGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come:

Be it known that I, MARCUS L. HORTON, of the town and county of Windsor, of the State of Vermont, have invented a new and useful Improvement in Furnaces for the Combustion of Fuel, my said improvement being particularly applicable to the furnaces or fire-places of cooking-stoves or ranges; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a longitudinal section; and

Figure 2, a transverse section of a fire-place as provided with my said invention or metallic lining.

Figure 3 is a front elevation of it.

Figure 4 is front view of part of one of the back plates of the chambered lining.

Figure 5 is a front view of part of the intermediate or check-plate, for use with the said lining-plates.

Figure 6 is a front view of part of the front or slatted plate or blind of such lining.

Figure 7 is a transverse section of the chambered lining with the check-plate.

Figure 8 is a transverse section of such lining without the check-plate.

Figure 9 is a transverse section of the check-plate.

In a fire-place provided with such a lining the air for support of combustion passes into and circulates through the lining, and from it escapes through the passages between its slats, and thence passes into the fuel, the air, during its passage through the said lining, absorbing heat therefrom.

The lining rests on a channel or air-duct surrounding the grate, and is or may be surmounted with a lining of fire-brick, as represented at A in the drawing, and of the kind described in Letters Patent No. 97,296, dated November 30, 1869, and granted to me.

The two linings open into each other so as to allow air to pass from one into the other, and escape from the upper into the space over the fuel and there intermingle with the combustible gases, so as to promote or facilitate their combustion.

In the drawing the fire-place is shown at B, as provided with an air-channel or duct, C, surrounding the grate D, and opening at its top into the slatted metallic lining E, which may be extended entirely or only partially around the fire-place, or it may be applied to opposite sides only of it, and be used with fire-brick or other linings, F, disposed at its ends, as shown in the drawing.

The channel or air-duct C is to be provided with one or more openings or mouths, *a a*, furnished with doors or dampers, *b b*, and there may or may not be a grate to the furnace or fire-place.

When a grate is used it may be furnished with solid bars, or it may have tubular ones, or it may be constructed like either of those described or represented

in the aforesaid patent and the patent No. 74,536, granted to me February 18, 1868.

When without a grate, a hearth or plate would be substituted, in which case it may be made or provided with means of discharging the ashes or waste of fuel, as occasion may require.

The chambered metallic lining I compose, first, of a plate, *c*, and a series of horizontal partitions or flanges, *d d d*, having perforations, *e e e*, in them, as shown; and, second, of another section or part, *f*, made with slats, *g g*, arranged like those of a common window-blind, with openings, *h*, between them, and provided, when necessary, with stay-rib connections, *i*.

These two sections, when arranged as shown in figs. 1, 2, 7, and 8, compose the chambered lining, which I usually make of cast iron, founding each of the sections in one entire piece, or in one or more pieces.

There may be interposed between the two sections, what I term the check-plate G, formed as represented in figs. 5 and 9, in which it is shown as having a series of long horizontal slats, *k*, each slat having directly underneath it a rib or flange, *b*, which has a trapezoidal transverse section.

These flanges, at their lower edges, rest on the tops of the slats of the front section, and serve to partially close or guard the openings of the slats, so as to prevent coal-ashes or cinders from passing from the fuel-space of the fire-place into the air-chamber of the metallic lining.

Besides this, the check-plates serve to bring the air into better contact with the slats, and are advantageous in other respects.

The chambered metallic linings, when combined with the fire-brick linings, as represented, should open at top into the lower part of the said fire-brick linings.

I claim—

1. The combination of the series of slats *g*, arranged as described, with the back-plate *c*, and its series of perforated partitions *d*, all being arranged as and for the purpose of making a metallic lining for a furnace, as specified.

2. The combination and arrangement of the slatted check-plate G, made as described, with the series of slats *g*, arranged as set forth, and with the back-plate *c*, and its series of divisional perforated partitions *d*, all being arranged as explained.

3. The combination and arrangement of the fire-brick lining A, as set forth, with the metallic lining, as composed of the series of slats *g*, and the back-plate *c*, and its perforated partitions *d*, or of such, and the check-plate G, as described, arranged as explained.

MARCUS L. HORTON.

Witnesses:

R. H. EDDY,  
J. R. SNOW.