

G. GRIEVE.  
Baker's Oven Furnace.

No. 215,604.

Patented May 20, 1879.

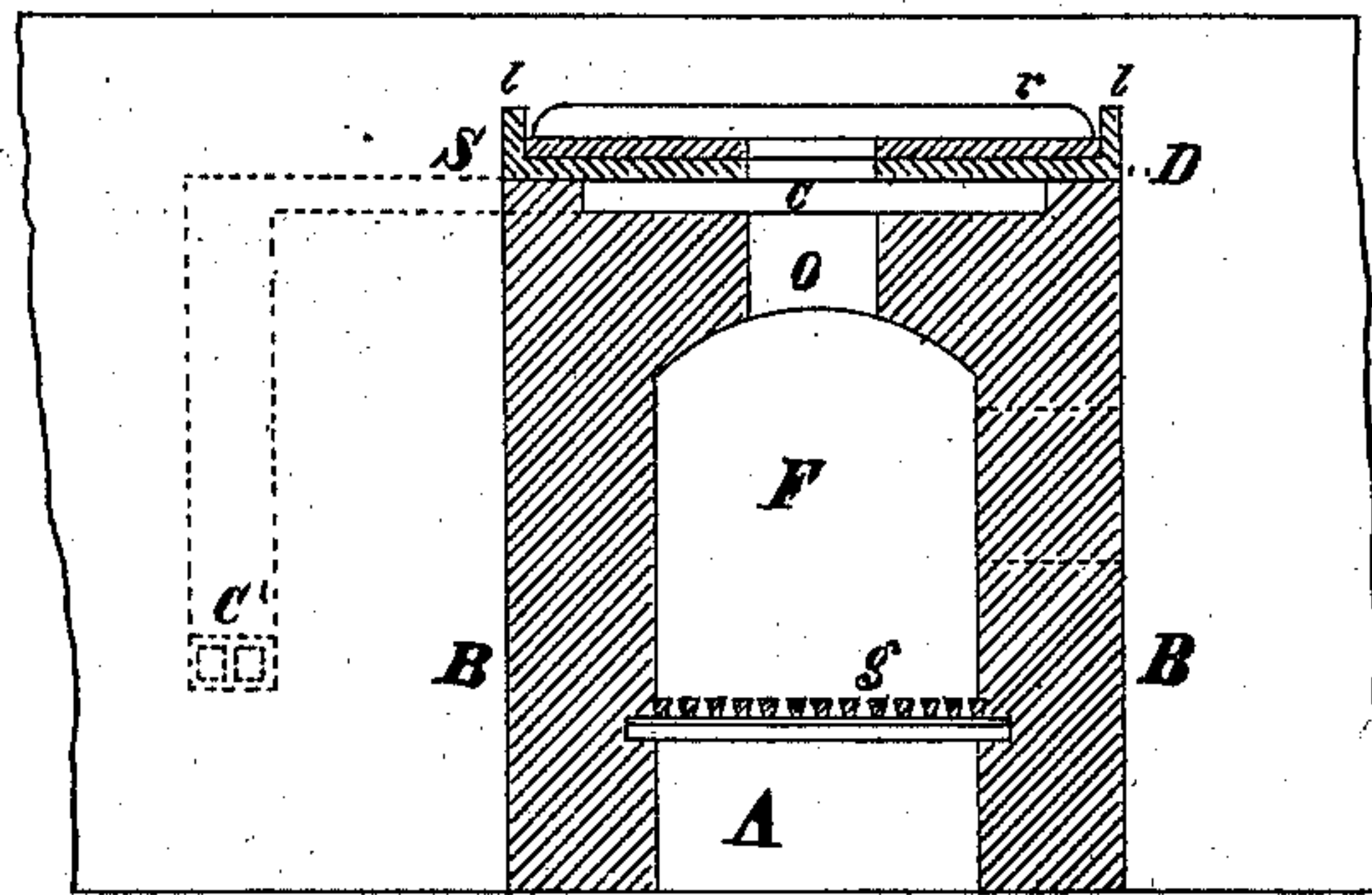


Fig. 3

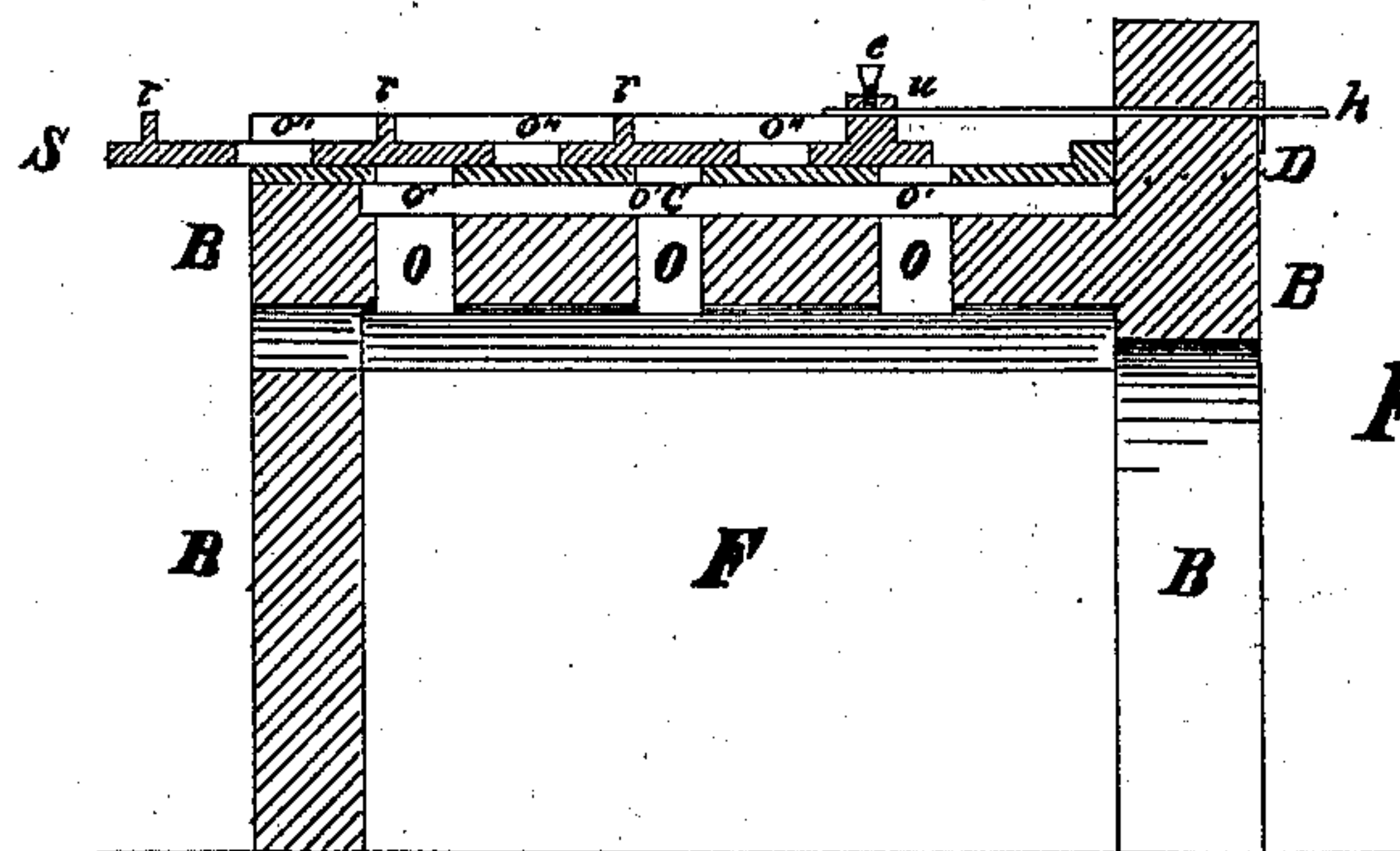


Fig. 2

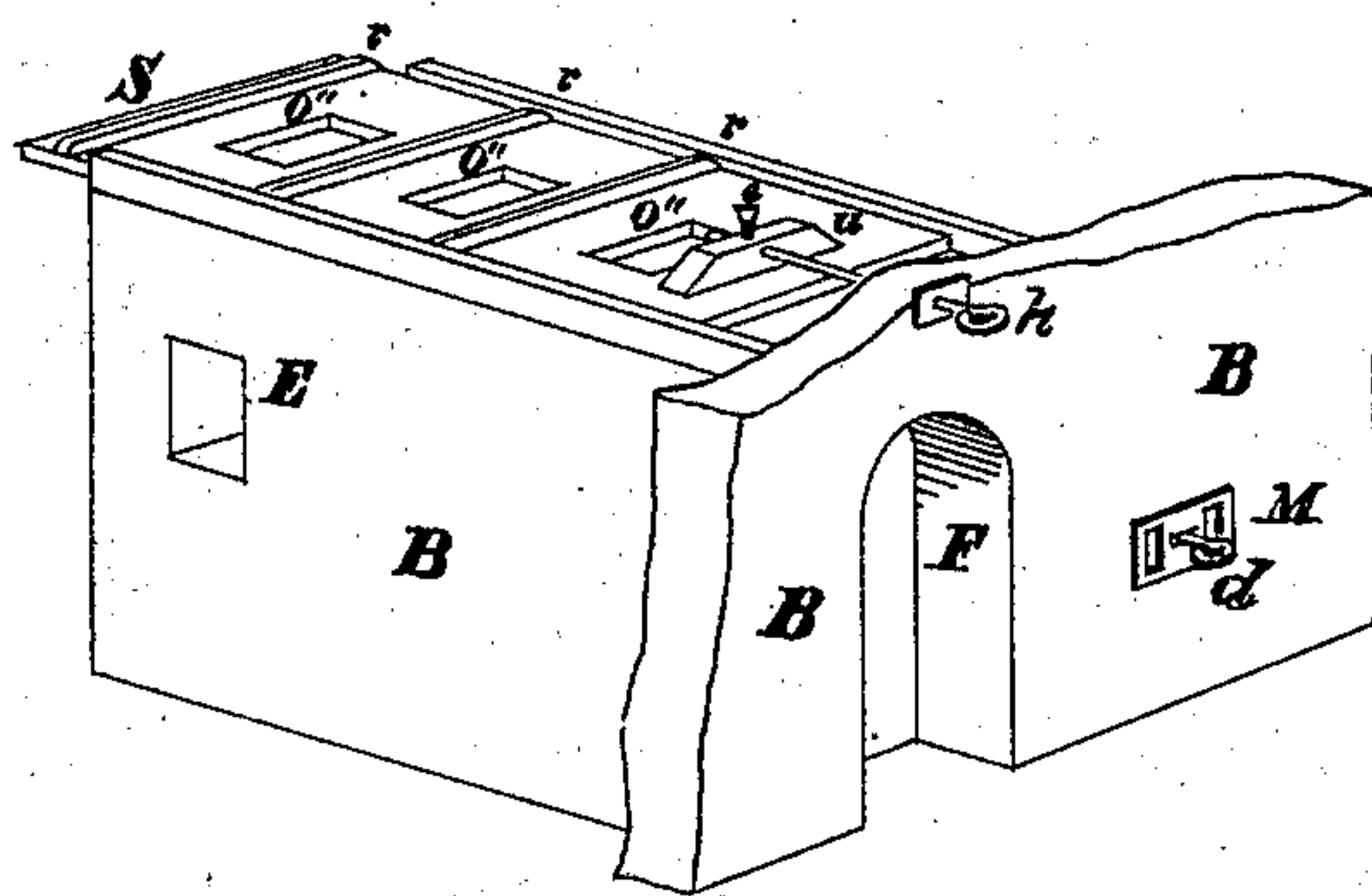


Fig. 1

WITNESSES.

*L. H. Putnam*  
*Otto Block*

INVENTOR.

*George Grieve.*  
*By Benj. H. Parsons his atty in fact.*

# UNITED STATES PATENT OFFICE.

GEORGE GRIEVE, OF PALMYRA, NEW YORK, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO GILBERT F. EVERSON, OF SAME PLACE.

## IMPROVEMENT IN BAKERS'-OVEN FURNACES.

Specification forming part of Letters Patent No. **215,604**, dated May 20, 1879; application filed  
March 5, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE GRIEVE, of the village of Palmyra, in the town of Palmyra, county of Wayne, and State of New York, have invented new and useful Improvements in Bakers'-Oven Furnaces, of which the following is a specification.

The invention relates to air-passages, dampers, and regulators for a furnace for a rotary baker's oven; and its object is to provide a novel system for the regulation of hot or cold air to the interior of the oven.

The invention consists in vertical apertures through the arch of the furnace, opening into cold-air chambers, out of which air is conducted by other apertures that are opened or closed by a horizontal slide-damper, a vertical damper for a cold-air passage, and regulators for the same, now to be more fully described.

Figure 1 is a perspective view of the front and left side. Fig. 2 is a longitudinal vertical sectional view through the center. Fig. 3 is a vertical transverse section through the center, in which figures—

B B represent the brick-work. F is the furnace; A, ash-pit; *g*, the grate; C, air-chamber; D, plate over air-chamber; S, damper-plate; *r*, strengthening-ribs; *h*, damper-regulator; *u*, lug; *e*, screw; *l l*, flanges; *o o*, air-passages through the arch; *o' o'*, air-apertures in the top over air-chamber; *o'' o''*, apertures through damper-plate; M, damper to cold-air flue or chamber; E, opening from furnace into the chimney.

There are two furnaces for a rotary hearth; but as they are identical it is deemed unnecessary for this application to set forth more than one. The walls B B are built up for any size furnace, having the top, except the vertical apertures *o o*, arched over in the usual manner. Said apertures are air-passages for hot or cold air, by means of which the temperature of the oven is regulated.

The door-aperture F through the front wall of the furnace is vertically separated from the ash-pit A by the furnace-grate *g*, and the opening E, near the back end of the left side, is for the escape of smoke into the chimney, which

chimney, not being connected to this invention, is not herein set forth.

The top of the furnace structure is leveled off even with the crown of the arch with fire-proof material, thereby forming a floor for the air-chamber C, which chamber is extended to any preferred height, from six to twelve inches, its top or cover being a metal plate, D. Said plate D is provided with vertical apertures *o' o'*, corresponding with the vertical air-passages *o o* below through said crown of the arch, and which apertures are placed directly over said passages.

The flanges *l l*, rising above the outward edges of said plate D, serve as guides, between which the damper-plate S is made to slide on the plate D back or forth over said apertures *o' o'*, by which movement the flow of hot or cold air into or out of the oven is regulated; and the flow of hot and cold air being thus regulated, the same ingress or egress of air regulates the temperature of the air in the oven. Said damper S is a metal plate of suitable thickness and strengthened by cross-ribs *r r*, which ribs and the lug *u* are cast solid with and on the top of the plate.

The movements of the damper S are made by the regulating-rod *h*, which rod passes through the front wall back to the lug *u*, to which lug it is connected by the screw *e*, the front end of the rod being formed into an oval-shaped opening for a handle with which to make said movements.

M is a damper, provided with the handle *d*, by which cold air is admitted into the flue C', as shown by dotted lines in Fig. 3, for supplying cold air to the air-chamber C.

The advantages of the invention are the following: The heat from the furnace is conducted up through vertical apertures directly over the same, instead of passing out of one horizontal opening at the back end, by which a greater proportion of heat than at present is saved for baking purposes, and a corresponding proportion of fuel is also saved. By the cold-air chamber the temperature of the oven is quicker lowered and regulated to suit the article required to be baked than by the common method.



Having now described my improvement, what I claim as my invention, and wish to secure by Letters Patent, is—

1. In bakers'-oven furnaces, the vertical air-passages *o* through the arch over the furnace, air-chamber C, plate D over the air-chamber, provided with the apertures *o'* and flanges *l*, slide-damper S, having apertures *o''*, transverse ribs *r*, and lug *u*, and regulating-rod *h*, passing through the front wall and connected to the damper by the screw *e* in said lug, essentially as set forth.

2. The combination, in bakers'-oven furnaces,

of the air-passages *o*, air-chamber C, plate D, damper-plate S, apertures *o'*, apertures *o''*, ribs *r*, lug *u*, regulator *h*, and screw *e* with the furnace F, walls B, damper M, and flue C', for the purposes described.

In testimony whereof I have hereto subscribed my name this 21st day of February, 1879.

GEORGE GRIEVE.

Witnesses:

FRED. H. HEBARD,  
JAMES B. PIKE.