

C. H. BUCK.

Stove Door.

No. 69,536.

Patented Oct. 8. 1867.

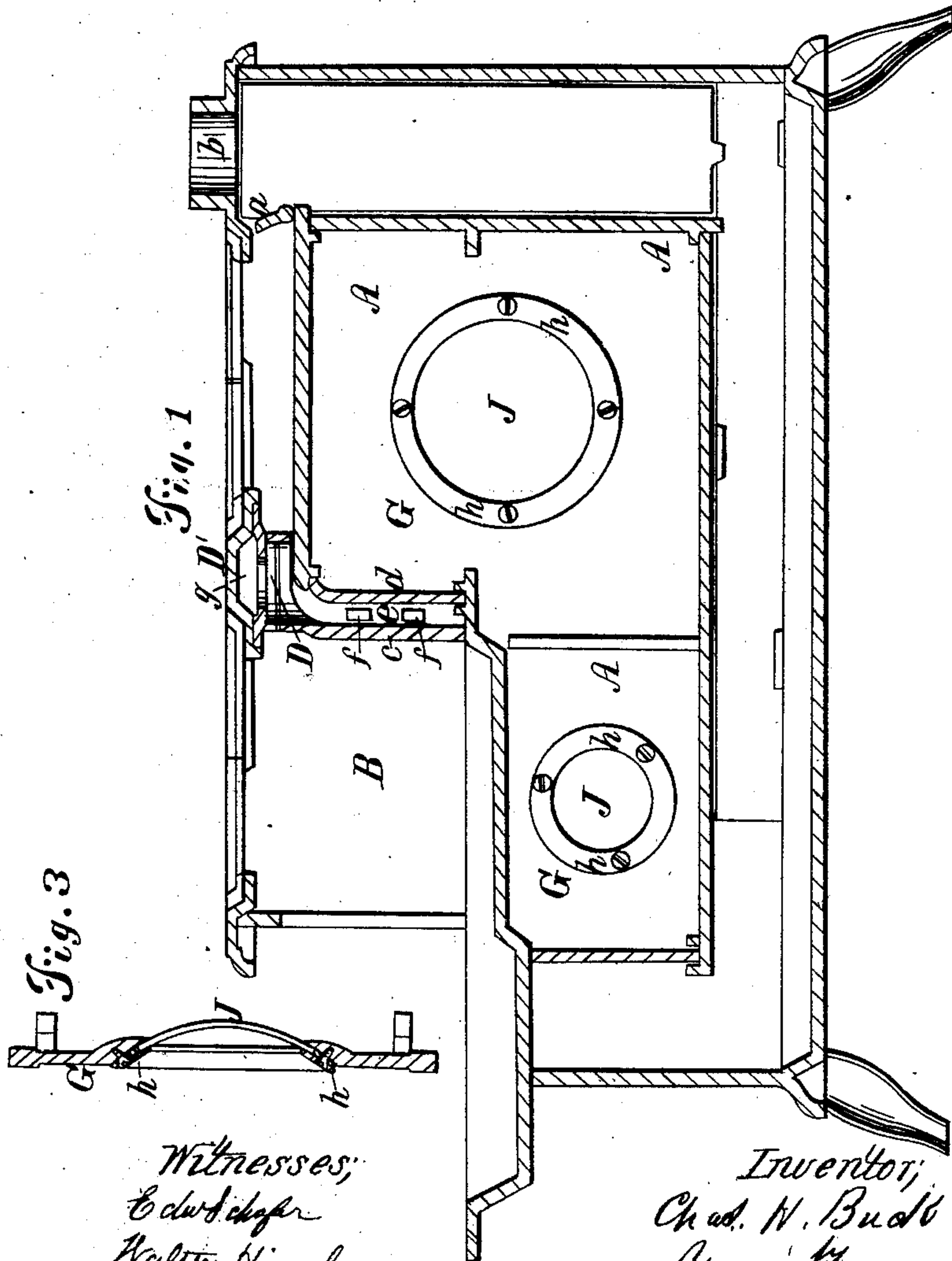
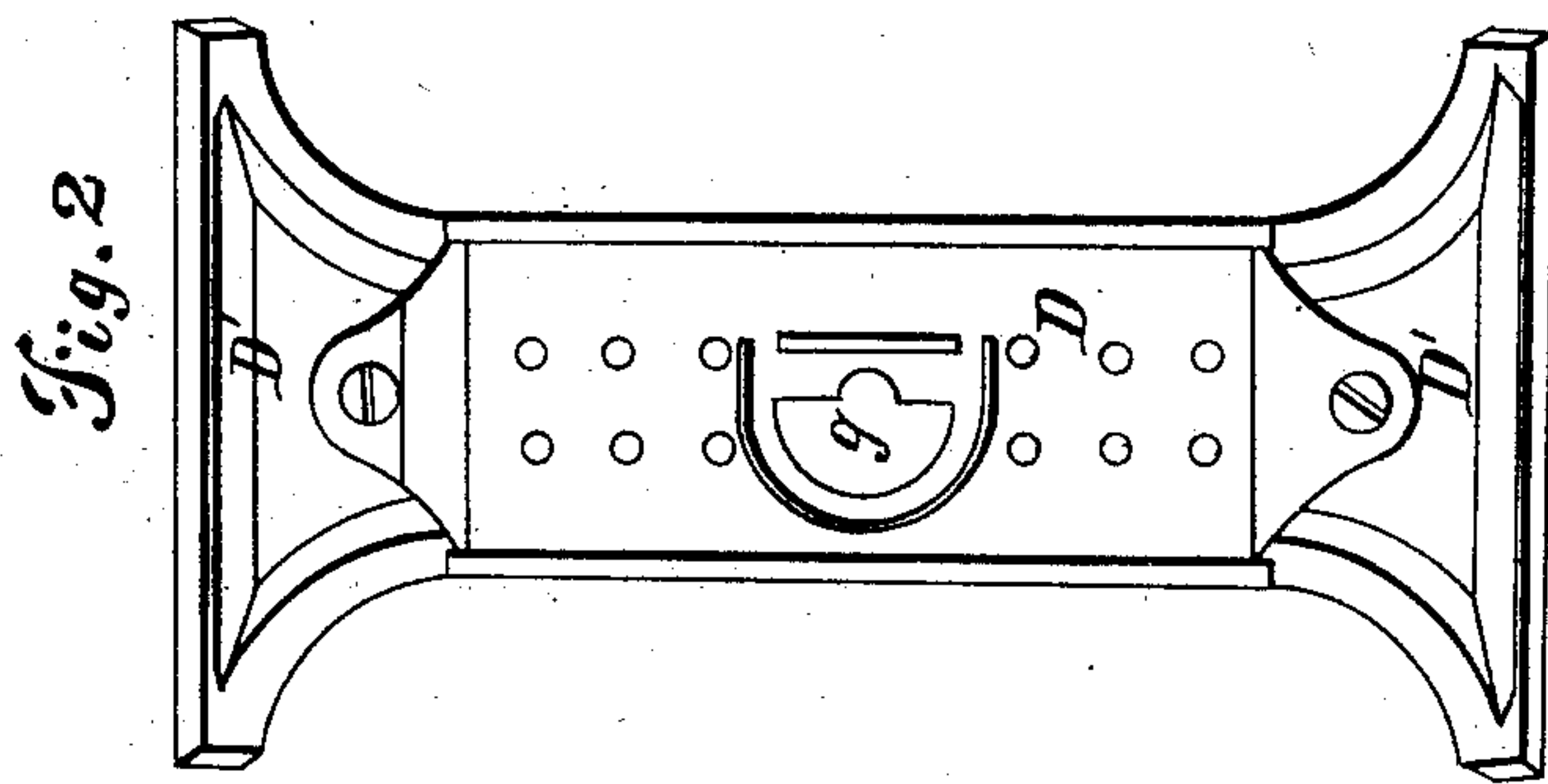


Fig. 3

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United States Patent Office.

CHARLES H. BUCK, OF ST. LOUIS, MISSOURI.

Letters Patent No. 69,536, dated October 8, 1867.

IMPROVEMENT IN COOKING-STOVES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES H. BUCK, of St. Louis, in the county of St. Louis, and State of Missouri, have invented an Improvement in Cooking-Stoves; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section taken longitudinally through the centre of my improved stove.

Figure 2 is a bottom view of the chambered bridge-plate.

Figure 3 is a sectional view of one of the oven-doors.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements on cooking-stoves which are constructed with a fire-chamber arranged over the front part of the oven, with provision for conducting the heated products of combustion around the oven, and distributing the heat uniformly over the same.

The nature of my invention consists in having a double-wall fire-back between the fire-chamber and oven, between the walls of which air is admitted through the sides of the stove, and conducted up into a chambered bridge-plate, where the air is discharged through small apertures into the exit throat of the fire-chamber, and caused to mix with the rising gases, and effects the combustion thereof, as will be hereinafter described. It also consists in a novel mode of applying glass to the stove-doors, for the purpose of exposing to view articles which are put into the oven of the stove, without having to open the doors for this purpose, as will be hereinafter described.

To enable others skilled in the art to understand my invention I will describe its construction and operation.

In the accompanying drawings, A represents the oven of the stove, which is surrounded on four sides with double walls, forming flue-chambers for the passage of the products of combustion over, behind, and beneath this oven, when the damper *a* is closed, as shown in fig. 1. When this damper *a* is open the products of combustion from the fire-chamber pass directly from the fire-chamber B over the top of the oven, and escape from the stove through the exit *b*. The manner of conducting the products of combustion beneath the oven is by the employment of partitions, so as to form two side passages leading from the space above the oven downward and forward on each side of a central flue, which latter is closed by the damper *a* applied at the upper end of said central space. This form of stove, and the arrangement of flues above described, are well known, and need not be more particularly described in this specification. The fire-chamber B is arranged over the front part of the oven A, and it is provided with a double-wall fire-back, consisting of a fire wall, *c*, and an oven wall, *d*, extending out to the side plates of the stove, and enclosing an air-heating and circulating space, *e*, into which air is allowed to enter freely through the openings *f f* through the side plates of the stove. The top of this chamber is closed, except at one point, which is in the middle of the width of the stove, and which forms a communication for the upward passage of air from said chamber into a chamber, *g*, which is constructed by the application of a thickly perforated plate, D, upon the bottom of the bridge-plate D', shown in figs. 1 and 2. The chamber *g* extends laterally outward from the central inlet aperture, and occupies a space nearly equal to the width of the stove, so as to freely distribute air through its perforated bottom plate and into the exit-throat of the fire-chamber, and thereby produce a more perfect combustion of the gases rising from said chamber, by supplying them with large quantities of oxygen. The air is drawn into the chamber *e*, between the walls *c d*, by the common draught of the stove, when it is exposed to the highly heated surface of the front plate *c*, from which it will abstract considerable heat. This heated air then rises through the central opening of the chamber *e* and enters chamber *g*, from which it is distributed into the exit-throat of the fire-chamber in numerous small streams or jets, as above stated. By thus admitting fresh air into the chamber *e* I not only heat this air before it is conducted into the fire-chamber, but I reduce the temperature of the fire-exposed plate *c* to such a degree that this plate will not readily burn out. The stove-doors G, which are applied for closing the oven, are constructed with large holes through their centres, as shown in figs. 1 and 3, adapted for receiving glass plates J, and having these plates secured to the doors so as to form windows for admitting light into the oven A. The glass plates J are made of a concavo-convex form, as shown in fig. 3, and they are secured in place so that they will not be liable to be broken by the expansion and contraction of the metal due to the extremes of heat and cold to

which both the glass and the metal are exposed. This is effected by bevelling the edge *s* of the hole which is through the door *G*, so as to receive the edge of plate *J*, and employing a ring, *h*, which is adapted to cover that portion of the plate *J* which touches said door. The ring *h* is secured in place by means of screws, which are intended merely as holding-screws for the ring, and not for clamping the plate *J*. The convex plate serves two important purposes: it allows a person to see objects within the oven without opening the doors thereof, and it will expose such objects to view in a better manner than a flat plate would.

I am aware that flat plate window-glass has been employed in the doors of cooking-stoves and other varieties of stoves, and I do not desire to claim broadly the application of glass to stove-doors. Flat glass plates are liable to be broken by pans and other objects in the oven striking them when the stove-door or doors are suddenly shut. The concavo-convex glass windows are not liable to be broken from such cause.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

Providing the doors of stoves with concavo-convex glass windows, secured within flaring openings through the stove-doors by means of rings *h*, substantially as described.

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Witnesses:

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