

(No Model.)

G. E. BUSCHICK.

2 Sheets—Sheet 1.

FURNACE.

No. 277,407.

Patented May 8, 1883.

Fig. 1.

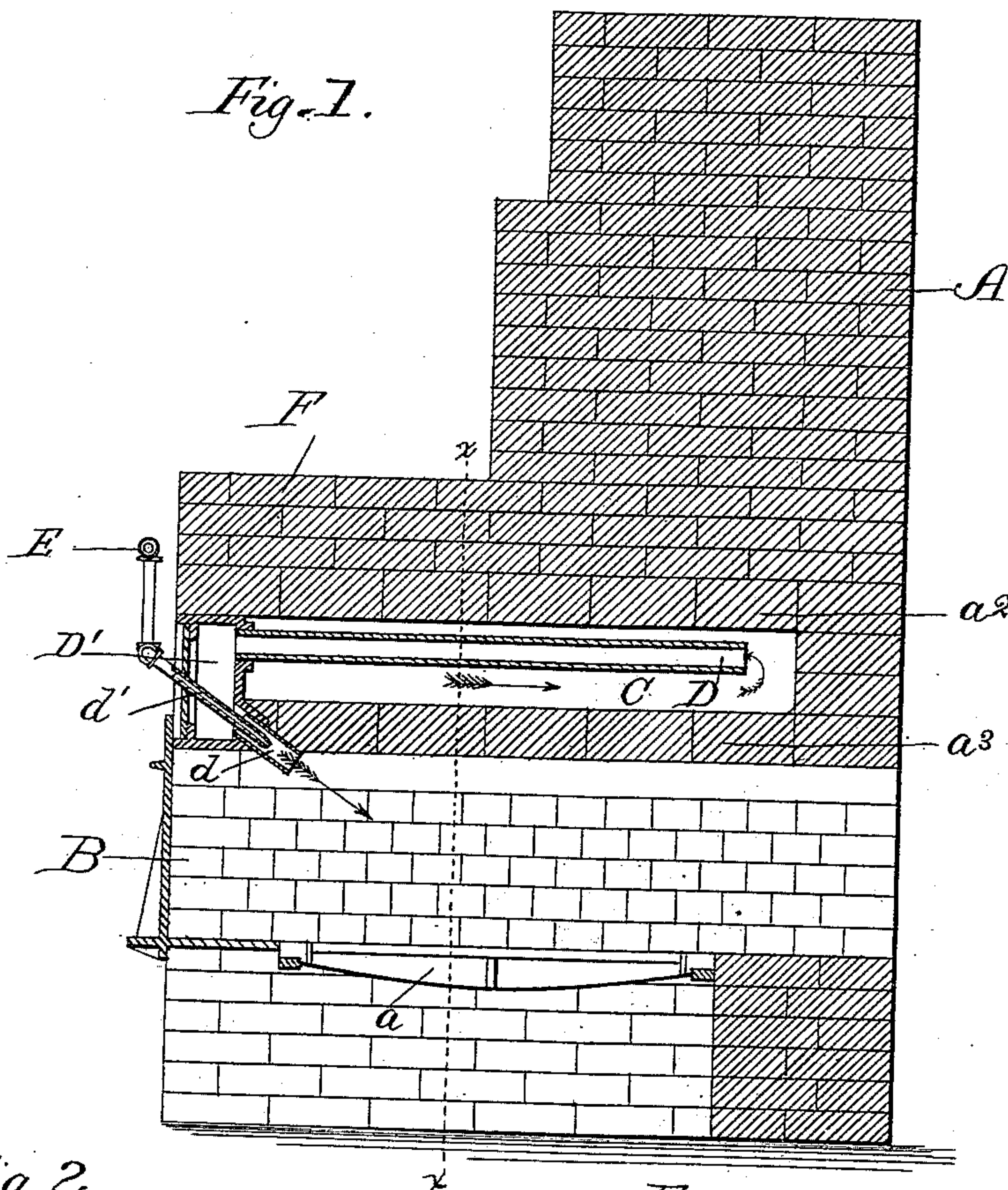
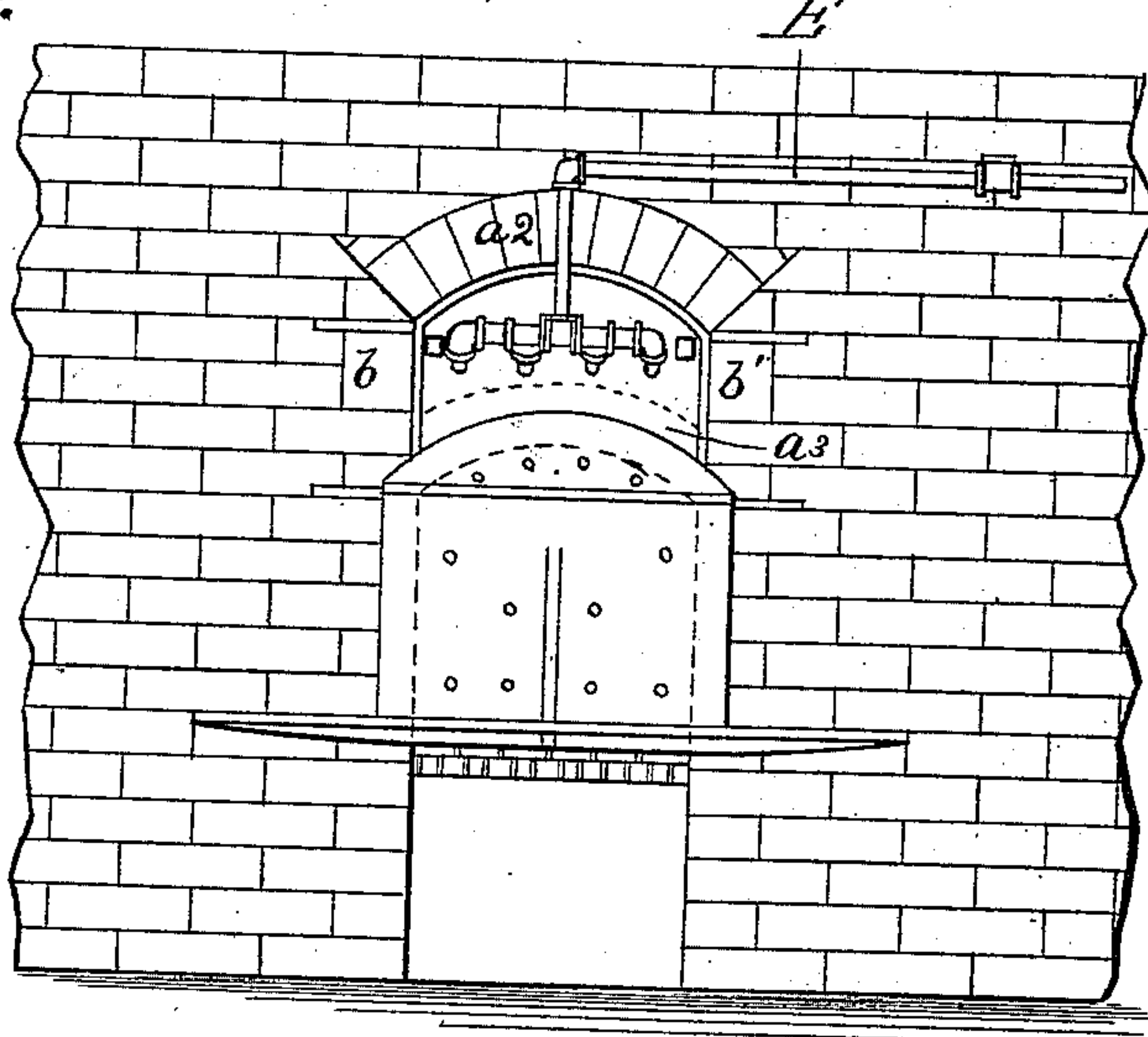


Fig. 2.



WITNESSES—

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INVENTOR—

G. E. Buschick
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(No Model.)

2 Sheets—Sheet 2.

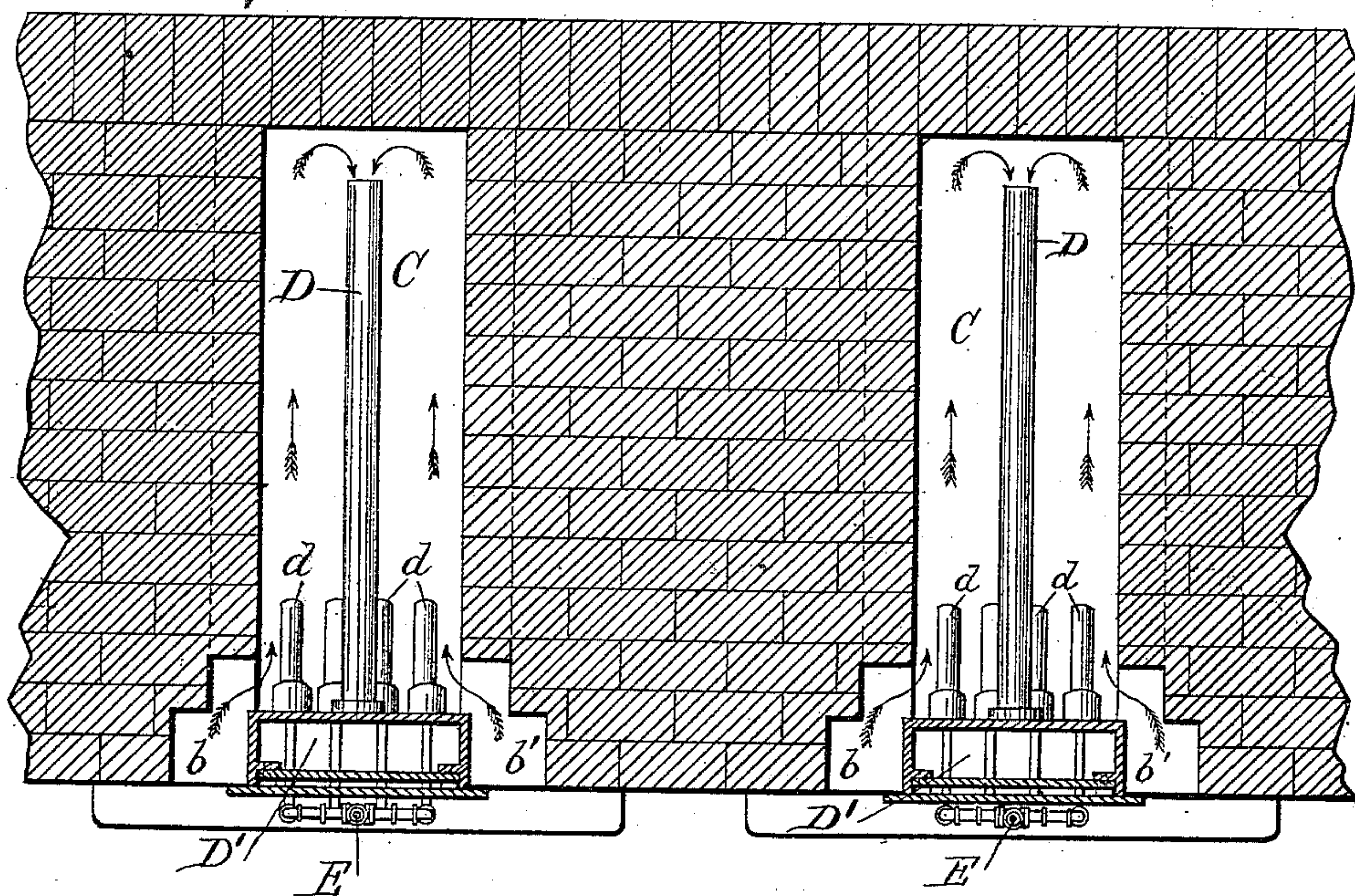
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Fig. 3.



WITNESSES—

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UNITED STATES PATENT OFFICE.

GUSTAVUS E. BUSCHICK, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
TO CHARLES E. GREGORY, OF SAME PLACE.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 277,407, dated May 8, 1883.

Application filed September 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS E. BUSCHICK, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Furnaces, of which the following is a full, clear, and exact description, that will enable others to understand and use the same, reference being had to the accompanying drawings and letters of reference marked thereon, forming a part of this specification.

This invention relates to improvements in furnaces, and is specially designed for brick-kilns; but it is obvious that it can be applied to other furnaces. When used in a brick-kiln it is so arranged that the heat from the series of furnaces may be distributed uniformly throughout the kiln by the employment of a forced draft; or each of the series of furnaces may be regulated independently of the other, so that a higher temperature may be maintained in one part of the kiln than in another, and also effects a great saving in fuel and consumes a great proportion of the smoke, the nature of the improvement being such that it is adapted to be applied to "clamps" that are already constructed, all as will be hereinafter more fully set forth.

Figure 1 is a side elevation embodying my improvement; Fig. 2, a front elevation of a single furnace; Fig. 3, a horizontal section broken away, giving a top view of the furnace.

Referring to the drawings, A represents the inclosing-wall of a brick-kiln structure.

Fig. 1 shows the relative position of the furnace and hot-air chamber C, which is located between the two arches a^2 a^3 , and receives the atmospheric air necessary to produce combustion through the openings b b' . (More clearly shown in Figs. 2 and 3 of the drawings.) The air entering the chamber C is heated to a high temperature by the radiation of heat from the arch a^3 , which forms the top of the furnace over the grate-bars. The air, after passing to the back part of the chamber C, is returned to the front through the pipe D, as indicated by the arrows in Fig. 3 of the drawings, which communicates with the hot-air box or compartment D', located above and at the front

end of the combustion-chamber, as shown in Figs. 1 and 3 of the drawings, the heated air being finally discharged into the combustion-chamber, over the fire, through the inclined tubes d , which have a connection with the compartment D'. The open ends of these inclined tubes terminate near the front end and top of the combustion-chamber, as shown in Fig. 1 of the drawings. Each of the series of tubes d have inserted therein a smaller tube or nozzle, d' , through which steam may be mingled with the hot air entering the furnace. Steam is supplied through the pipe E, and the inner ends of the nozzles d' are contracted, so as to impart a greater force to the volume of steam injected into the furnace, sufficient space being left between the nozzles and the interior of the tubes d for a free passage of the air.

The steam-pipe E will of course be continuous, so as to connect with each one of the series of furnaces, and be supplied with suitable stop-valves for regulating the volume of steam supplied to each furnace independent of the other. By this arrangement and the employment of steam in connection with a brick-kiln, the heated air is easily driven clear to the center of the clamp from each side; or the steam may be entirely shut off at one point and its use continued at another, as the burning of the brick may require. The process of combustion is conveniently regulated and a proper temperature maintained both during the drying-out and the burning process.

A fan-blower may be used in place of the steam-jet, should such a change be desirable.

This improvement may be applied to kilns that are already built by the addition of the wall F to the inclosing-walls A, outward from the line x x , Fig. 1.

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

1. In a brick-kiln furnace, the combination, with the hot-air chamber C, having the air-inlets b b' , and separated from the furnace by the arch a^3 , of the pipe D, extending to a point near the back end of said air-chamber and opening therein, the hot-air compartment D',

and the series of inclined tubes d , communicating with the furnace or combustion-chamber, substantially as described.

2. In a brick-kiln furnace, the combination,
5 with the hot-air chamber C, of the hot-air compartment D', the air-conducting pipe D, extending to a point near the back end of said chamber, the series of tubes d , the steam-noz-

zles d' , and the main conducting steam-pipe E, combined, arranged, and operating substantially as and for the purpose set forth.

GUSTAVUS E. BUSCHICK.

Witnesses:

L. B. COUPLAND,
CHAS. F. JONES.