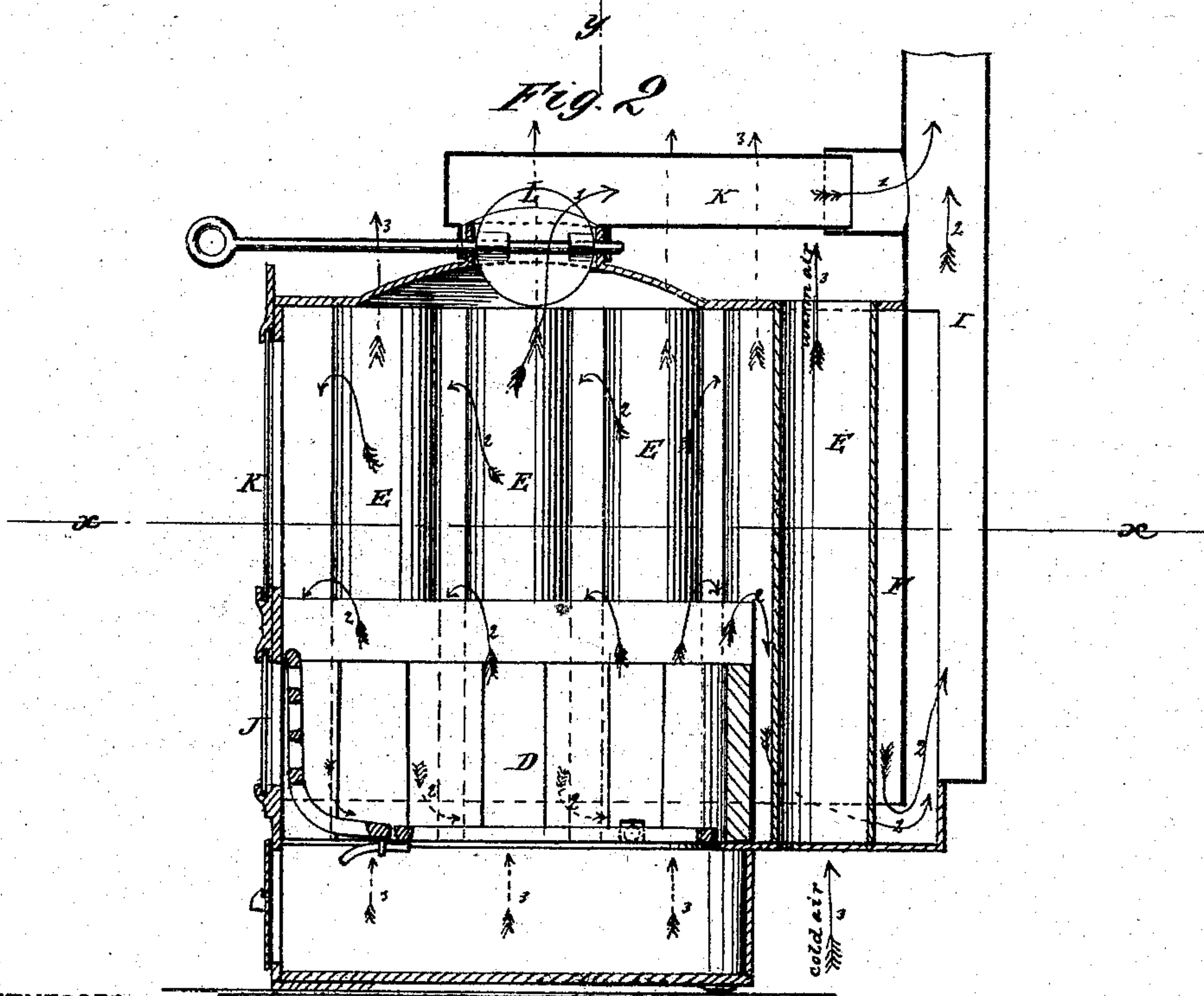
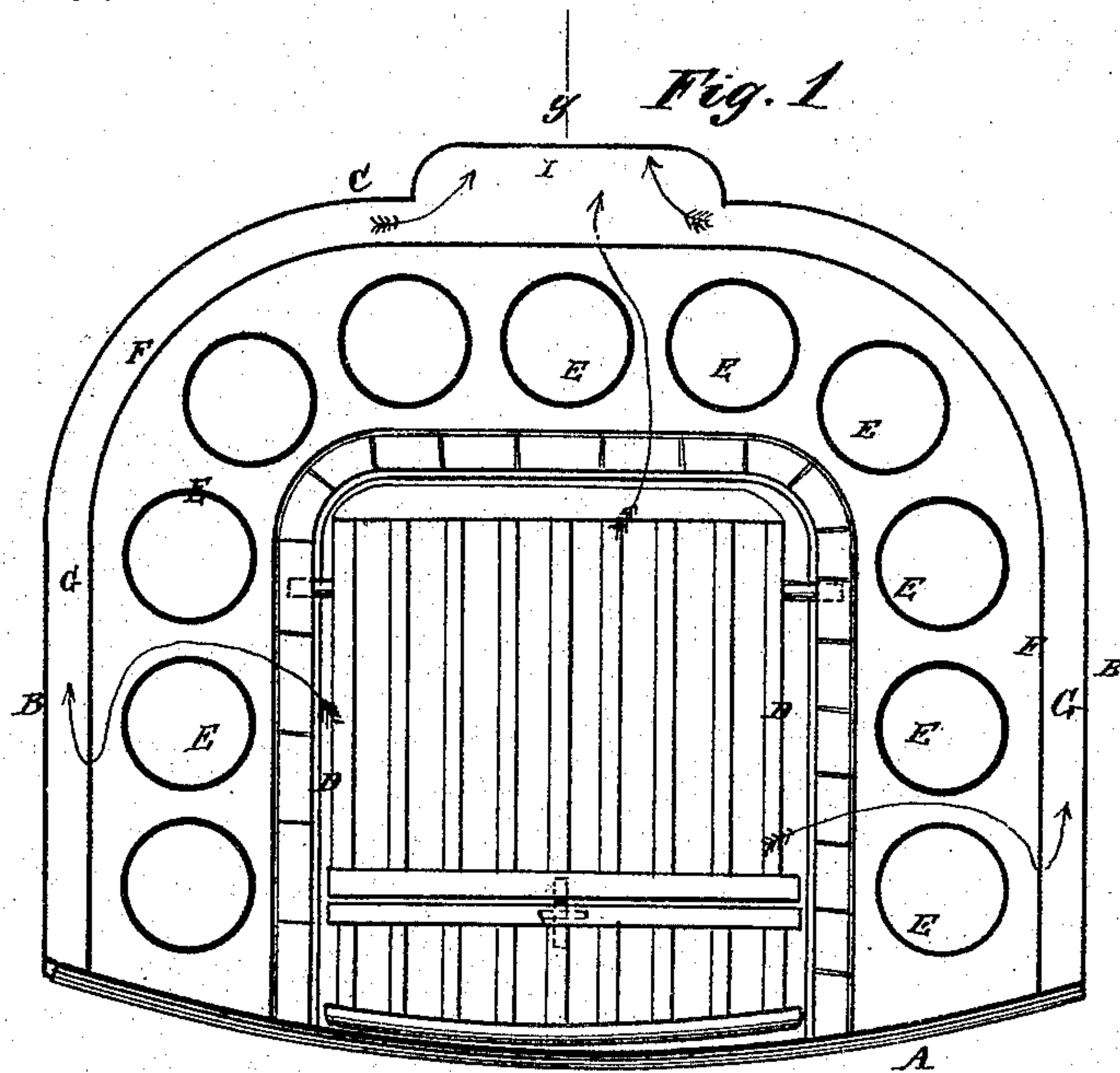


E. E. GOLD.
Heating-Stoves.

No. 156,727.

Patented Nov. 10, 1874.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD E. GOLD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 156,727, dated November 10, 1874; application filed December 20, 1873.

To all whom it may concern:

Be it known that I, EDWARD E. GOLD, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Heating-Stove, of which the following is a specification:

My invention consists of a heating-stove or furnace shaped suitably for fitting into a fire-place, for a fire-place heater, but also adapted for use as an ordinary stove, having the fire-pot surrounded by large vertical tubes extending through the top and bottom plate for heating air; also, having a curtain extending from the top plate nearly to the bottom plate, between the tubes and the outside plate, for causing the heat to pass from the upper part of the fire-space and the heating-tubes, to which it first rises, down along said tubes to the bottom before escaping from them, so as to heat the tubes, and the air passing through them, as much as possible. Said heater also has a wide open front, with sliding illuminated doors, whereby it can be used for an open or closed fire.

Besides the principal draft, the stove has a direct draft from the top, with a damper for shutting it off, to be used for starting the fire.

Figure 1 is a horizontal section of a heater constructed according to my improvements, the section being taken on the line *xx* of Fig. 2; and Fig. 2 is a sectional elevation taken on the line *yy* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the front, which is slightly convex; B, the sides, and C the back, which together are shaped in such curved form as to adapt the heater to fit into a fire-place flush with the front, or projecting more or less thereat, when the heater is to be so used; but when intended for use as an ordinary stove they may be formed in the same or any approved shape. D is the fire-pot, which is substantially of the same form as the exterior part of the heater, but sufficiently smaller to allow of the introduction of a row of large vertical air-heating pipes, E, between it and the sides B and back C; also, a plate, F, between the tubes and said sides and back, and a space, G, between the plate F and the sides and back, the said tubes extending from the bottom plate to the

top plate, considerably above the fire-pot, and through said plates, to allow the air in sufficient quantity to take up most of the heat to pass through them for that purpose; and the plate or curtain F prevents the direct escape of the heat, and causes it to turn back from the top down along the tubes, in a manner calculated to secure great efficiency in the application of it to the air. From under the plate F, which stops short of the bottom plate, the draft passes to the escape-flue I. J represents the doors in front of the grate, and K upper doors in front of the fire-chamber, arranged for sliding forward and back along the front plate to open and close the furnace. They open as wide as the whole width of the furnace, to convert the heater into an open fire when wanted.

The upper ones, and the lower ones, too, if preferred, will have windows for illuminating purposes.

Besides the indirect draft above described, I propose to have a direct one from the top of the fire-place through the pipe K, with a damper, L, for use when starting the fire.

My improved heater differs from others in that the tubes are widely separated from each other, and from the plate or apron F, which is placed some distance back of them, and does not extend to the bottom plate, so that the heat passes between and behind the tubes, and below the apron, and then has a direct and free escape all round between the apron and outside plate, whereby as much of the heat is utilized as in any other heater, and a considerable advantage is gained over all other heaters in which this down-draft has been tried, in that the flues do not choke and cause explosions of gas, and expulsion of it into the room, when fresh fuel is added, as in other cases—as, for instance, when the apron is extended to the bottom, and the escape-flue is formed in part of a lateral passage under the fire-pot, connecting the downward flue with the upward escape-flue. The choking caused by the greater descent below the fire, and the angles and turns, is certain to cause large quantities of gas to be held back when fresh fuel is put on, so as to explode and force out into the room.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

The combination, in a heating-stove, of the tubes E, apron F, and outside plate C with the fire-pot, the tubes being arranged with wide spaces between them, and with a space between them and the apron, and the apron terminating above the bottom plate, to allow

the products of combustion to escape under it and into the space G, all substantially as specified.

EDWARD E. GOLD.

Witnesses:

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C. SEDGWICK.