

(No Model.)

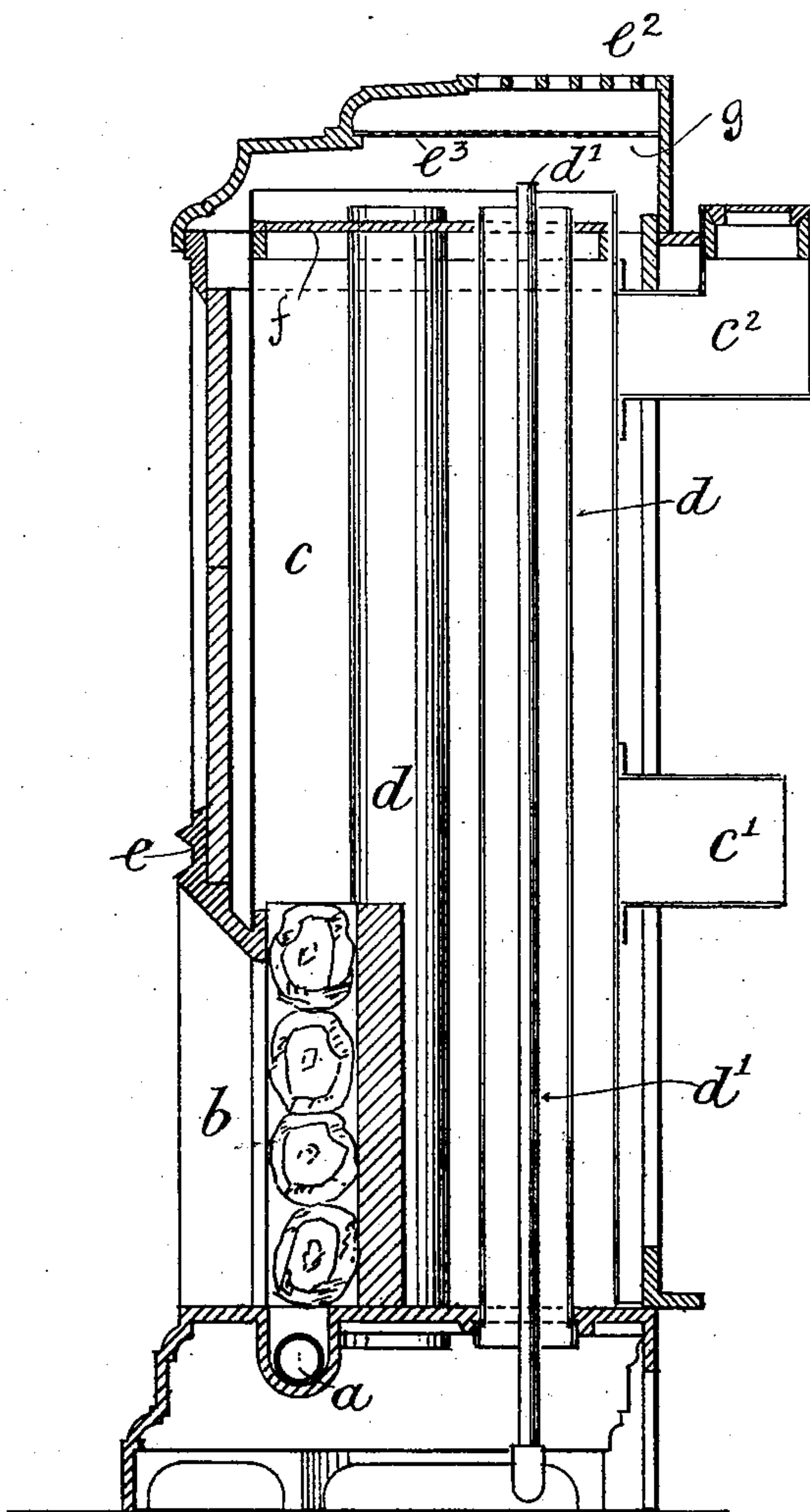
2 Sheets—Sheet 1.

J. LANGFIELD.
GAS STOVE.

No. 605,725.

Patented June 14, 1898.

FIG. 1.



WITNESSES:

F. W. Wright
Wm. A. A. A.

INVENTOR

JOHN LANGFIELD

BY

Houston and Houston
HIS ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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GAS STOVE.

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FIG. 2.

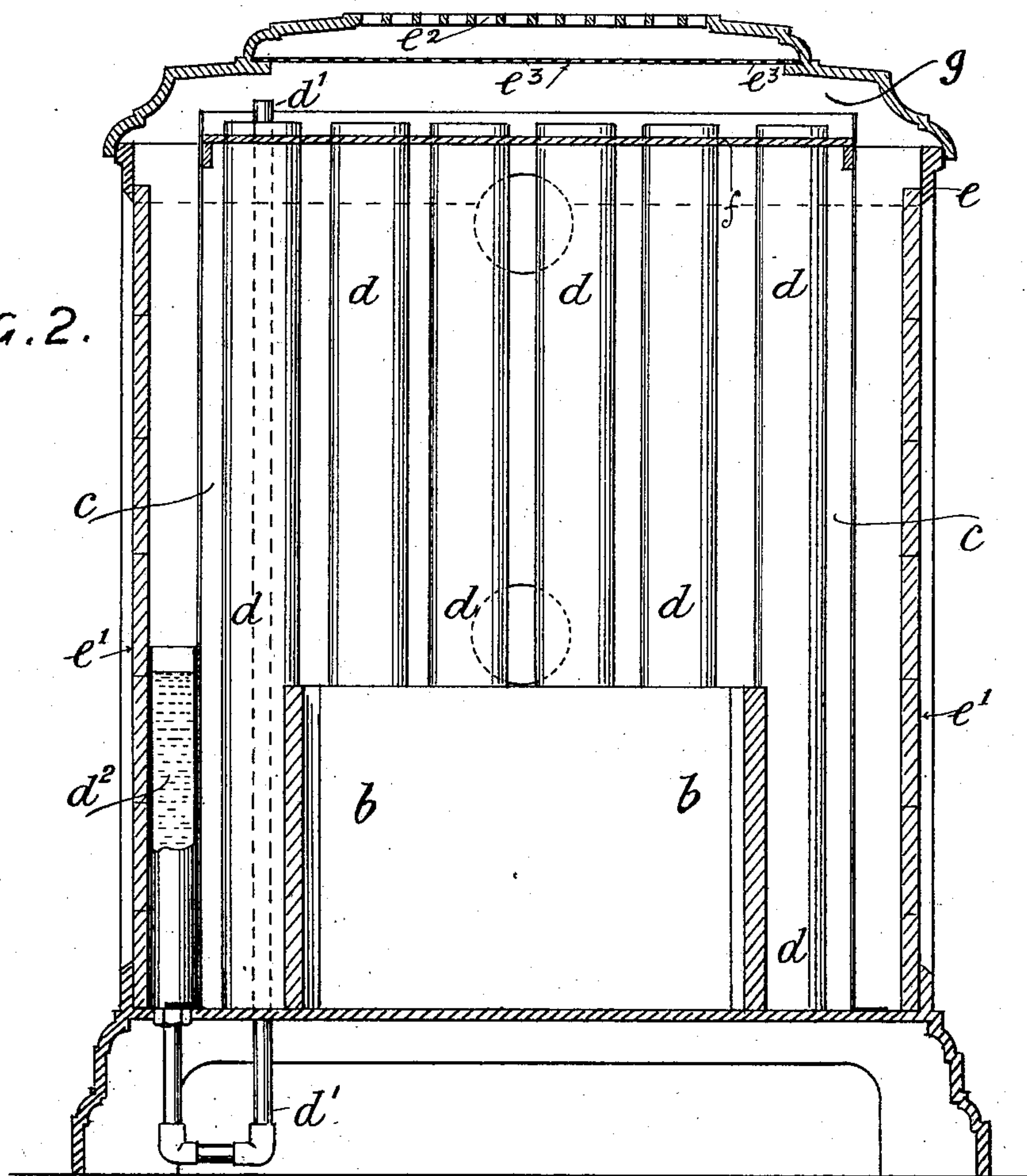
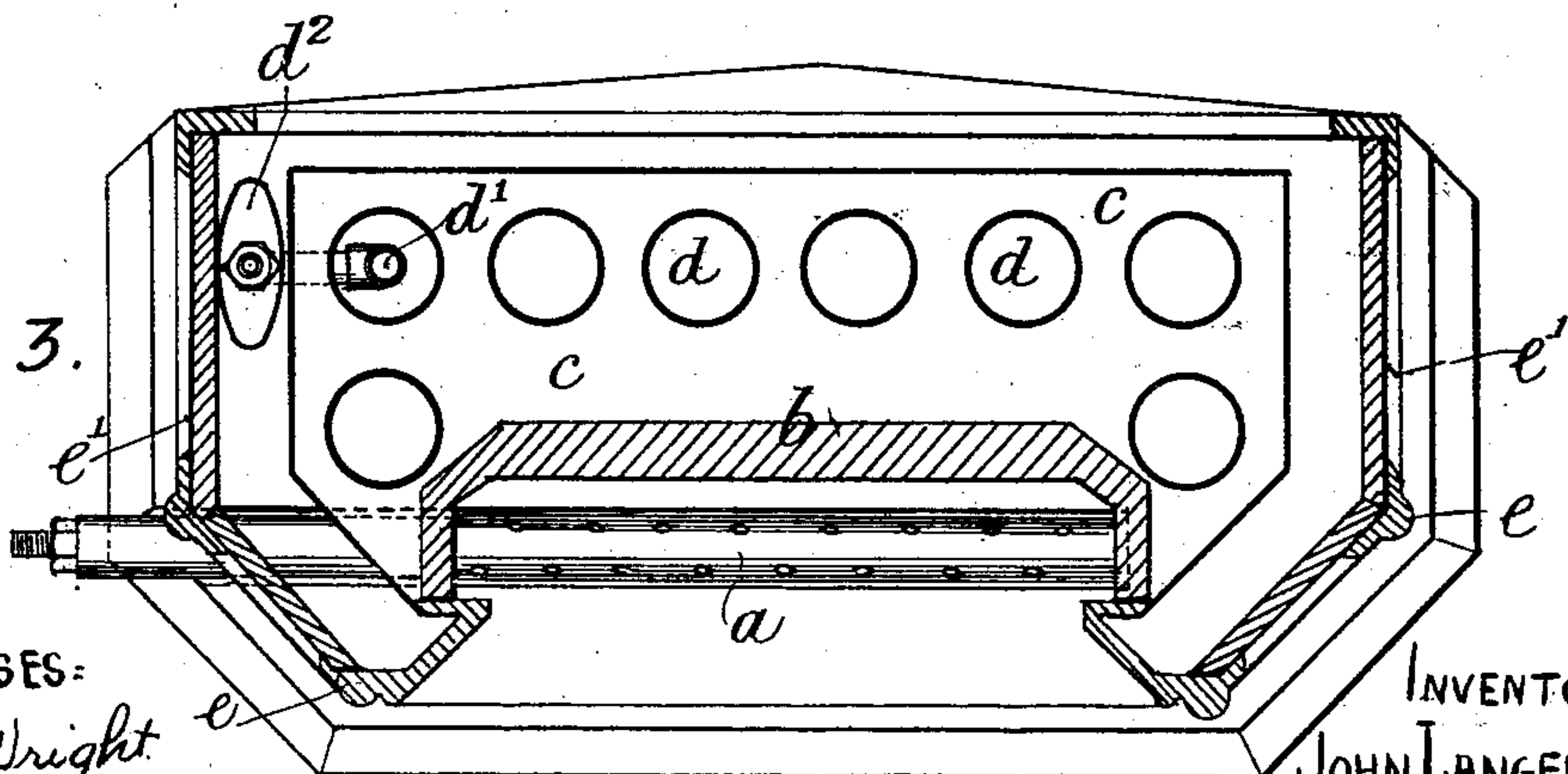


FIG. 3.



WITNESSES:

F. W. Wright

Notary at

INVENTOR

JOHN LANGFIELD

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HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN LANGFIELD, OF MANCHESTER, ENGLAND.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 605,725, dated June 14, 1898.

Application filed March 4, 1898. Serial No. 672,575. (No model.)

To all whom it may concern:

Be it known that I, JOHN LANGFIELD, a subject of the Queen of Great Britain and Ireland, residing at Manchester, in the county of Lancaster, England, have invented new and useful Improvements in Gas-Stoves, of which the following is a specification.

This invention relates to improvements in gas-stoves for heating air; and it consists in the combination, with a Bunsen or other suitable gas-burner, of a suitable casing divided into a hot-air chamber and a heating-chamber by a partition near the top, in the lower part of which the burner is fitted, the said chamber also being provided with air-tubes communicating at the top of the chamber through a perforated plate with the room or place to be supplied with hot air and at the bottom with a fresh-air supply and a fine screen located within the hot-air chamber. The heating-chamber is also provided with an outlet for the heated product of combustion at such a point in its height as to leave a considerable column of heat, which practically remains at a constant temperature. The heating-chamber is also provided at the upper part with a safety-valve, so that in case of the gas being turned on and not ignited until the mixture of air and gas in the heating-chamber becomes explosive the safety-valve will relieve the pressure in the heating-chamber and prevent bursting of the same and the issuing of flame from the stove.

My invention will be fully understood on reference to the accompanying sheet of drawings and the following explanation thereof.

Figure 1 is a transverse vertical section; Fig. 2, a longitudinal vertical section. Fig. 3 is a horizontal section of a gas-stove made according to my invention in the form which I prefer.

a is the burner.

b is a grate or space which I prefer to provide above the burner *a*, filled with pieces of asbestos, rendered incandescent when the gas is alight.

c is the chamber, heated by the burner *a* and the incandescent asbestos.

f is a partition dividing the casing into the heating-chamber *c* and a hot-air chamber *g*.

The air-pipes *d* pass from top to bottom of the chamber *c*, behind the fire-space, and

through the partition *f*, and one of the pipes *d* is shown provided with a water-pipe *d'*, supplied with water from a small cistern *d''*. The water in the pipe *d'* is heated by the heating of the air in the corresponding pipe *d*.

c', Fig. 1, is the outlet for products of combustion from the chamber *c*, above which, it will be seen, is a considerable space for the accumulation of a column of heat, which remains at practically a constant temperature.

c'' is a short pipe or recess at the top of the chamber *c*, but extended outside the latter, where it is covered by a loose lid, which acts as a safety-valve in cases of explosion on first lighting the gas, as above described. By this means the fresh air supplied to the tubes *d* becomes heated therein and as it expands rises into the room or place to be heated, and the inner tube *d'*, (or tubes,) containing water, as above described, becomes (or become) highly heated by the hot air in the tube *d* (which in its turn has been heated by the gas) and emits (or emit) steam into the hot air, thus moistening the same in the proportion required by the heat of the air which absorbs it.

The air-heating chamber *c* may be made ornamental or fitted into a casing *e*, provided with tiles *e'*, as shown, (or otherwise ornamented,) and with a gridded, perforated, or ornamental open-work top *e''*, beneath which is preferably fitted a fine sieve or screen *e'''* for arresting dirt or impurities in suspension in the heated air rising from the tubes *d*.

This apparatus is very applicable to the heating of small spaces, such as greenhouses and the like.

I claim—

A gas-stove consisting of a casing having a suitable burner and a fireplace located directly above the burner, a partition near the top dividing the casing into a heating-chamber and a hot-air chamber, vertical air-heating pipes passing through the heating-chamber behind the fireplace and communicating with the hot-air chamber above the partition, a perforated top to which said air-heating pipes lead, a fine screen interposed between the perforated top and the upper ends of the air-heating pipes in the hot-air chamber, an outlet for the products of combustion at such height in the air-heating chamber as to form a column of heat around a considerable por-

tion of the air-heating pipes, and a safety-outlet communicating with the heating-chamber slightly below the partition and leading to the outside of the casing, and there provided with a valve, whereby force of explosion within the heating-chamber will be prevented from disrupting the parts, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN LANGFIELD.

Witnesses:

CHARLES A. DAVIES,
JNO. HUGHES.