

No. 768,203.

PATENTED AUG. 23, 1904.

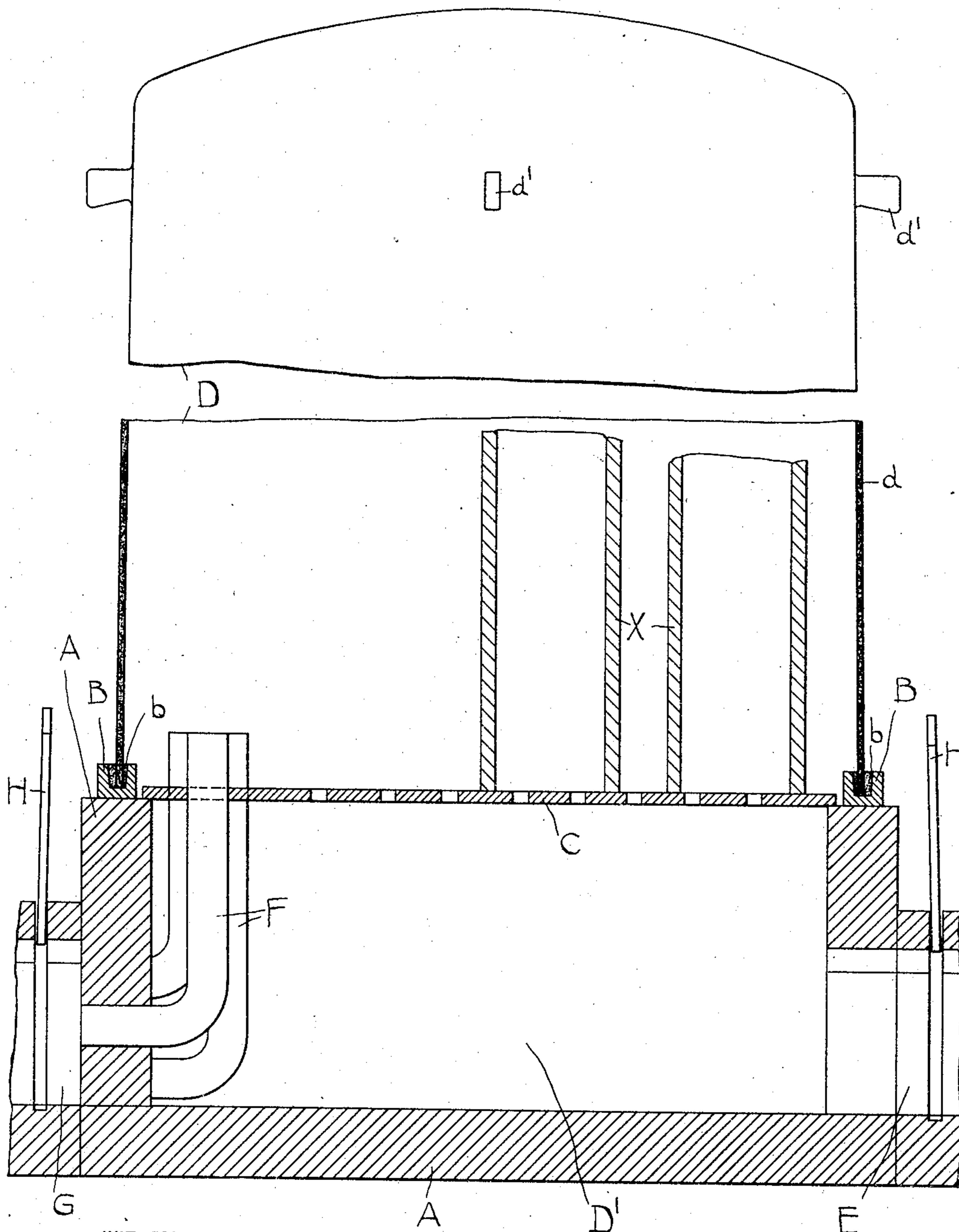
M. M. SUPPES & O. PHELPS.

DRYING OVEN.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:
A. V. A. B. M. Cauley.
Loretto O'briennell

FIG. 1

M. M. SUPPES
O. PHELPS
BY
Geo. H. Parmelee,
their ATTORNEY.

No. 768,203.

PATENTED AUG. 23, 1904.

M. M. SUPPES & O. PHELPS.
DRYING OVEN.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

3 SHEETS—SHEET 2.

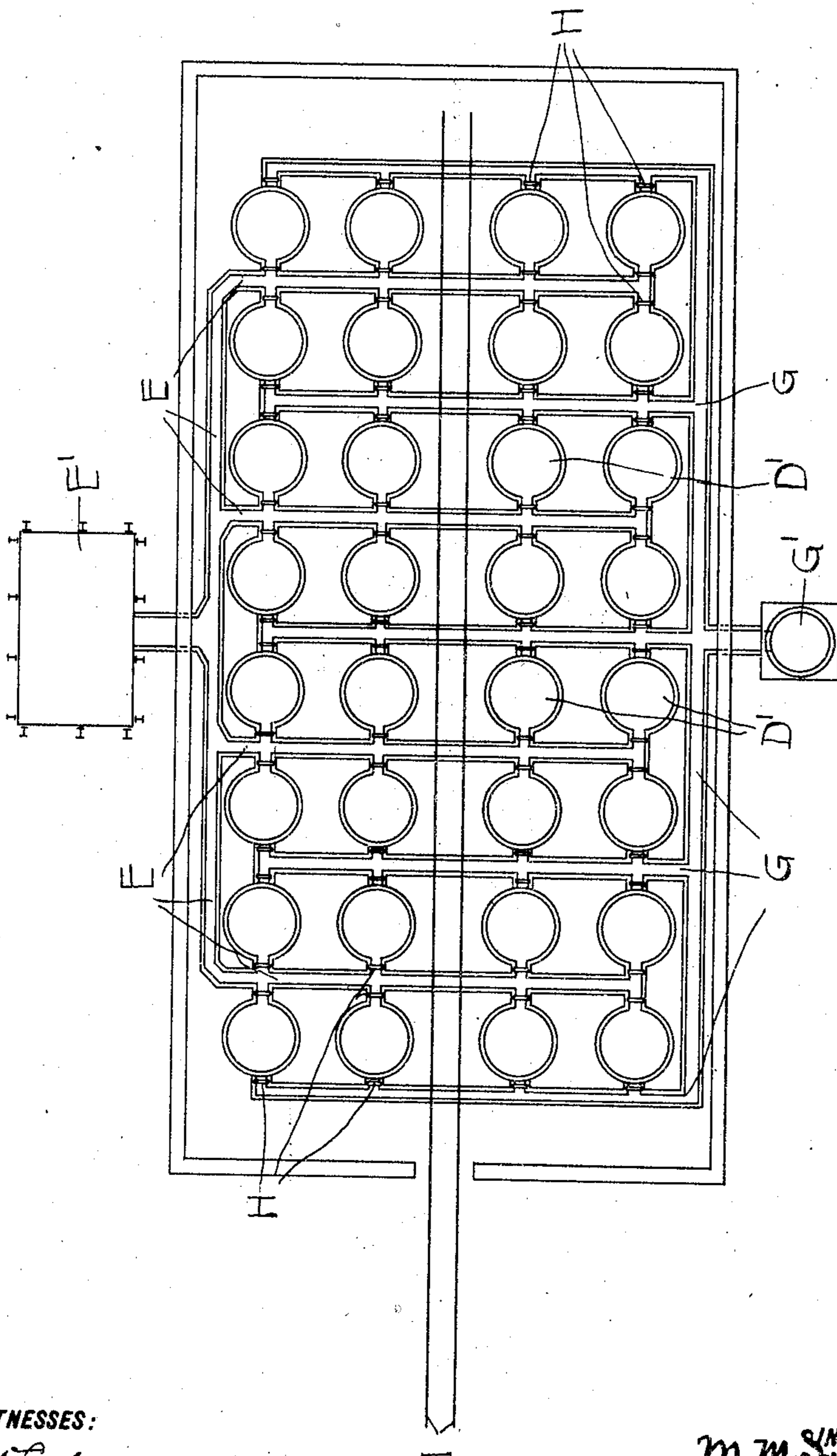


Fig. 2

WITNESSES:

A. V. A. B. McCauley.
L. O'bannell

M. M. SUPPES
O. PHELPS
BY
Geo. H. Parmelee,
their ATTORNEY.

No. 768,203.

PATENTED AUG. 23, 1904.

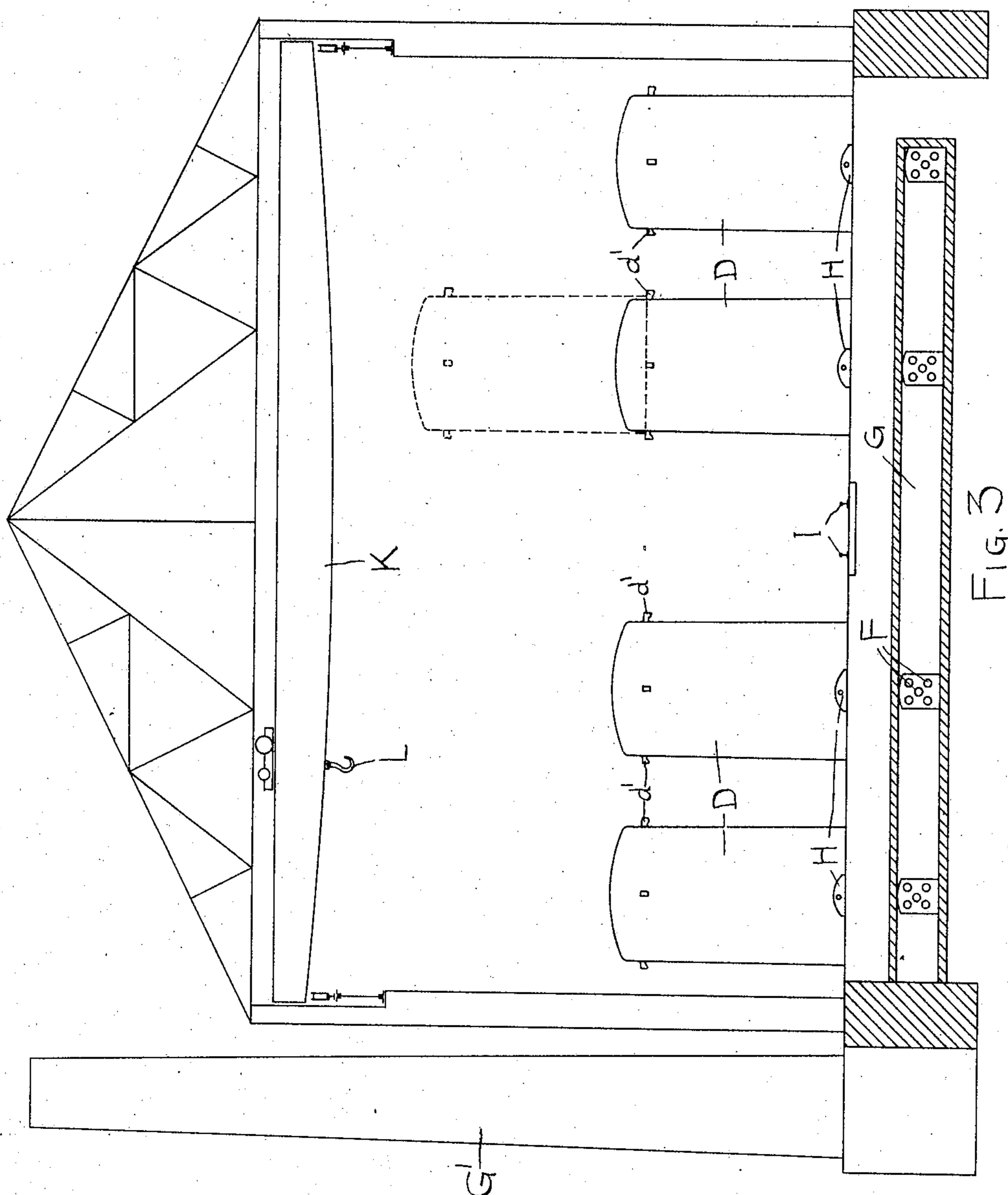
M. M. SUPPES & O. PHELPS.

DRYING OVEN.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES:

A. V. A. B. M. Cauley.
Loretta O'Connell

M. M. SUPPES
O. PHELPS
BY
Geo. H. Parmelee,
their ATTORNEY.

UNITED STATES PATENT OFFICE.

MAXIMILIAN M. SUPPES AND OLIVER PHELPS, OF ELYRIA, OHIO.

DRYING-OVEN.

SPECIFICATION forming part of Letters Patent No. 768,203, dated August 23, 1904.

Application filed December 5, 1903. Serial No. 183,957. (No model.)

To all whom it may concern:

Be it known that we, MAXIMILIAN M. SUPPES and OLIVER PHELPS, of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Drying-Ovens, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

Our invention has relation to certain new and useful improvements in drying-ovens, and while it has been more particularly designed for the purpose of providing means for drying cores and molds in foundries it is also adapted for drying or baking various other articles and objects, such as clay and pottery ware, wood, lumber, &c. It has been customary heretofore to construct ovens of this character of brick or to build them in pits, and it has been a very difficult matter to close or seal them sufficiently tight, especially around the doors, to prevent the escape of dust and smoke into the foundry or drying-room. These ovens have also necessarily occupied a considerable amount of space, and there is a large loss of heat by radiation.

Our object has been to provide an oven constructed in such a manner as to make doors and other openings entirely unnecessary and which can be effectually sealed to prevent the escape of smoke and dust, also to provide an oven which is compact, which can be readily charged and discharged, and in which the loss of heat by radiation is reduced to a minimum.

A further object of the invention is to provide means whereby our improved ovens may be conveniently operated in groups or batteries.

With these objects in view our invention consists in an oven comprising a suitable base or bed upon which are placed the objects to be dried or baked and a bodily-removable body portion in the form of a hollow shell open only at its lower end, together with means for sealing the joint between said shell and the bed or base and means for effecting a circulation of a heating medium within said shell.

Our invention also consists in a certain

novel arrangement of ovens of this character in groups or batteries in combination with means for their convenient and economical operation.

Our invention also consists in the novel construction, combination, and arrangement of parts, all substantially as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a view of one of our ovens, shown partly in side elevation and partly in vertical section; Fig. 2, a plan view showing a group or battery of the ovens, and Fig. 3 a sectional elevation of the same.

The letter A designates a suitable base or foundation which forms a support for a sealing-trough B and a perforated base-plate C, upon which are placed the cores or molds X to be dried or baked.

D designates the body portion of the oven, which is formed from sheet metal and is entirely closed except at its bottom. It is preferably formed of two thicknesses of metal, as shown in Fig. 1, with an interposed filling *d*, of asbestos, mineral wool, cinder, or other refractory non-conducting material. It is seated in the sealing-trough B in a body *b* of sand, which forms an effective seal to prevent the escape of gases, dust, and smoke.

Below the perforated base-plate C is a chamber D', connected by a flue E with a suitable furnace or heater.

F represents return-pipes, which extend out into a stack-flue G.

H designates dampers for regulating the circulation through the oven.

The ovens are preferably arranged in groups or batteries, as shown in Figs 2 and 3, upon each side of a track I, upon which cars for bringing the green cores or molds to the ovens and for carrying away the dried cores may be run. The ovens are supplied with heat by a series of flues E, leading from a heater or furnace E', the several return-flues G leading to a stack G'. Each oven is provided with dampers H.

K, Fig. 3, is a traveling crane which spans the groups of ovens and carries a hoist L. The chains of this hoist may be engaged with

hooks or lugs d' on the oven-bodies D, and said bodies may be lifted bodily off from and onto the bases. While an oven is being charged or discharged its body D may be
5 placed upon an adjacent oven, as shown in Fig. 3, thereby economizing floor-space.

The bodies or shells D are preferable cylindrical in form in order to avoid corners into which the heat would not penetrate equally
10 with the more central portions. The tops of the shells are preferably rounded or dome-shaped, so that the heat entering the oven and rising to the top will be deflected downwardly again throughout the oven. By extending
15 the return-pipes F somewhat above the floor of the oven a direct return-passage for the heat circulation is prevented. In drying hollow cores, such as shown in Fig. 1, these may be placed so as to form natural flues through
20 which will pass the hot air and gases from the furnace.

We do not wish to be limited to the particular means for obtaining a circulation through the ovens which we have herein shown and
25 described, as this may be accomplished in various ways known to the art.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

30 1. A drying-oven, comprising a suitable bed or base, and a removable portable body or shell arranged to be seated upon said bed or base and forming the top and lateral walls of the oven, said body or shell being closed except
35 at its bottom, and means for effecting the circulation of a heated medium therethrough.

2. The herein-described drying-oven, comprising a suitable bed or base, and a removable body portion or shell arranged to be seated
40 upon said bed or base and forming the top and lateral walls of the oven, said portion or shell being closed except at its bottom, and means for seating the joint between the bottom edge of the shell and the base, together with means
45 for effecting the circulation of a heated medium therethrough.

3. A drying-oven composed of a suitable bed or base upon which are placed the objects to be dried, and a portable sheet-metal shell
50 forming the walls of the oven and seating upon said base, said shell being closed except at the bottom, and a sand seal for the bottom of said shell, together with means for effecting the circulation of a heated medium there-
55 through.

4. A drying-oven, composed of a base-plate or floor, and a removable sheet-metal body or shell forming the walls of the oven and entirely closed except at its lower end, and means
60 for effecting a circulation of a heated medium through the said body or shell.

5. The herein-described drying-oven, consisting of a suitable base or floor, and a mov-

able body or shell, closed except at its lower end, forming the top and lateral walls of the
65 oven, and formed of two thicknesses of sheet metal, with an interposed filling of non-conducting material, together with means for effecting the circulation of a heated medium
70 therethrough.

6. The herein-described drying-oven, consisting of a suitable floor or base, and a movable cylindric body or shell, closed except at
75 its bottom, and having a rounded, or dome-shaped top, together with means for effecting the circulation of a heated medium there-
through.

7. The herein-described oven, consisting of a suitable floor or base, a sealing-trough thereon containing a body of sealing material, and
80 a movable sheet-metal body or shell, forming the lateral and top walls of the oven, said shell being closed except at its bottom, and arranged to seat in said sealing material, together with
85 means for effecting the circulation of a heated medium therethrough.

8. A drying-oven consisting of a perforated base arranged to support the objects to be dried, a heating-flue communicating with the
90 under side of said base, a movable sheet-metal body or shell forming the top and lateral walls of the oven, and return-flues communicating with the interior of said body or
shell.

9. A series of drying-ovens, having their
95 top and lateral walls formed by movable bodies or shells, a traveling crane spanning the series of ovens, and a hoist carried by the said crane for lifting said bodies or shells, together with
100 means for effecting the circulation of a heated medium therethrough.

10. The combination with a series of drying-ovens, whose body portions are formed by movable sheet-metal shells, and means for
105 effecting a circulation of a heated medium therethrough, of a traveling crane spanning the said ovens, a hoist carried thereby, means whereby the hoist may be engaged with any
110 one of said shells, and means for supporting one shell upon another.

11. The herein-described drying-oven, comprising a suitably-fixed floor or base, having
115 openings therein, and a movable sheet-metal body or shell forming the lateral and top walls of the oven, together with means for effecting a circulation of a heated medium within the oven by means of the said open-
ings.

In testimony whereof we have affixed our signatures in presence of two witnesses.

MAXIMILIAN M. SUPPES.
OLIVER PHELPS.

Witnesses:

D. W. LAWRENCE,
ROSE NOLTON.