

(No Model.)

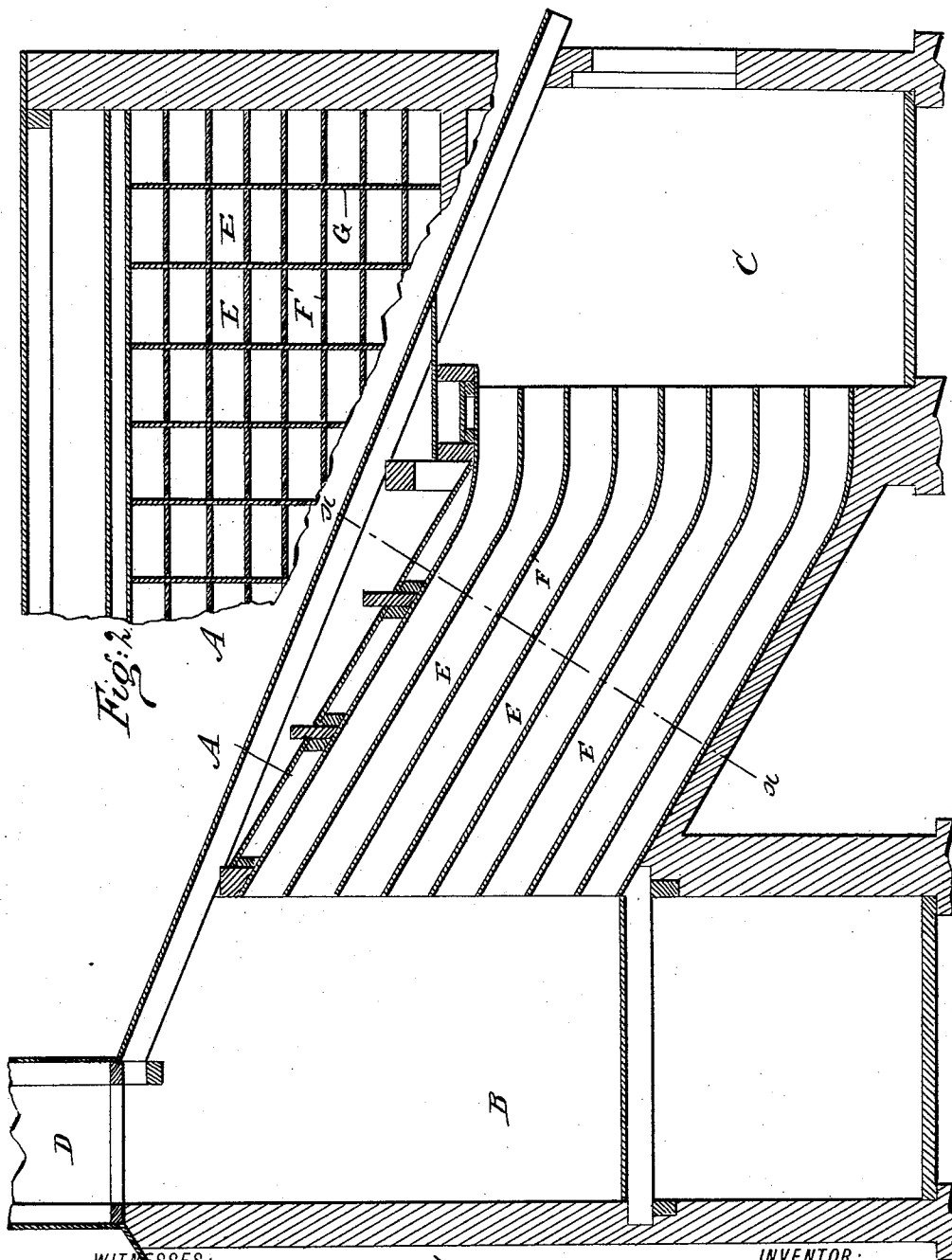
2 Sheets—Sheet 1.

A. SCHAAF.

DRYING STOVE FOR BRICKS OR OTHER MATERIALS.

No. 483,018.

Patented Sept. 20, 1892.



WITNESSES:
Chas. Vida
C. Bedgerick

Fig. 1.

INVENTOR:
A. Schaaf
BY *Munn & Co*
ATTORNEYS

(No Model.)

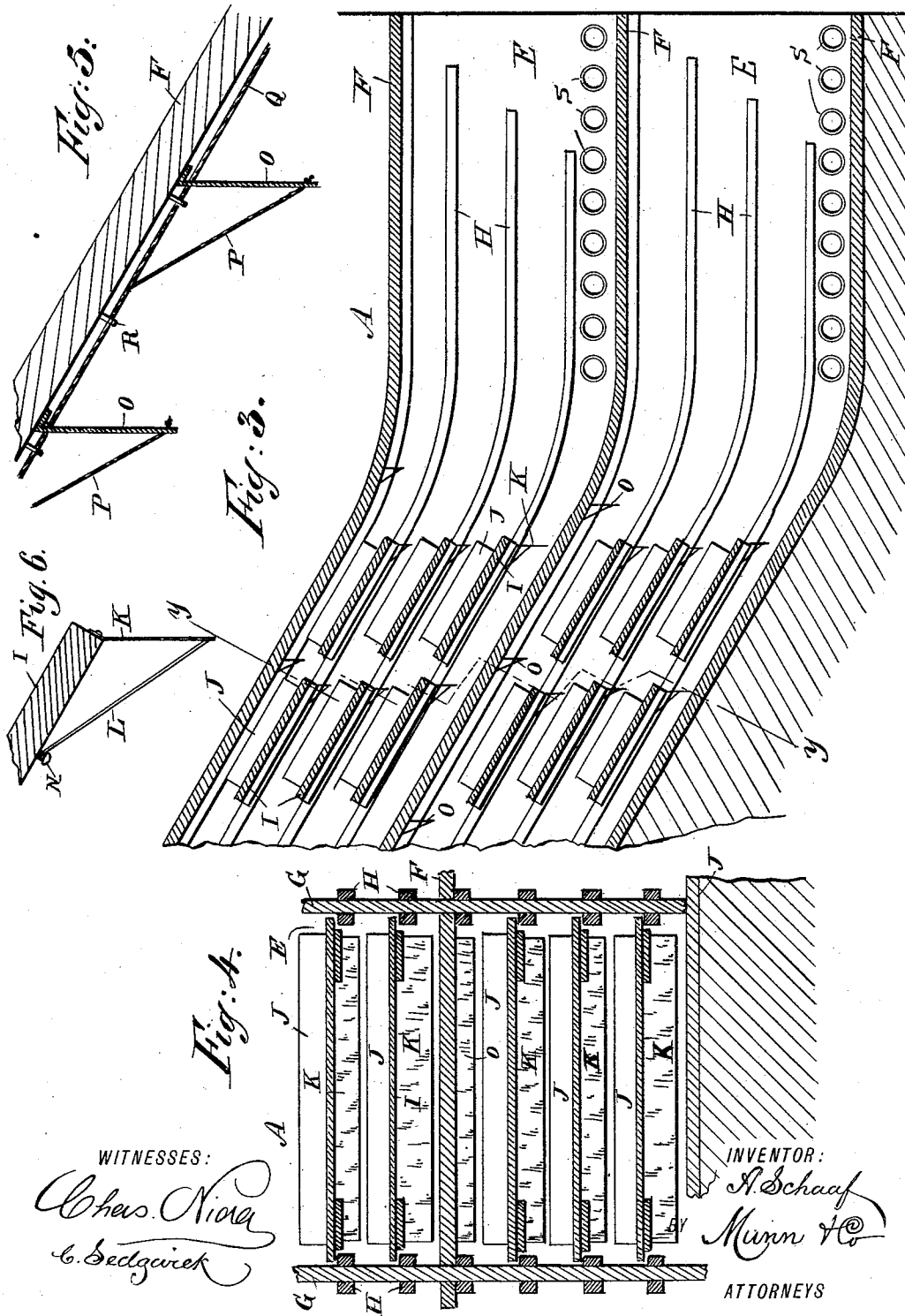
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WITNESSES:
Chas. N. V. N.
C. Sedgwick

INVENTOR:
A. Schaaf
Munro & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT SCHAAF, OF HALLE, GERMANY.

DRYING-STOVE FOR BRICKS OR OTHER MATERIALS.

SPECIFICATION forming part of Letters Patent No. 483,018, dated September 20, 1892.

Application filed August 15, 1890. Serial No. 362,055. (No model.)

To all whom it may concern:

Be it known that I, ALBERT SCHAAF, of Halle, in the Kingdom of Prussia, German Empire, have invented a new and Improved Drying Stove or Furnace, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved drying stove or furnace specially designed for drying brick, ceramic articles, &c., and which is simple and durable in construction, utilizes the heat to the fullest advantage, and insures a uniform heating of all sides of the articles under treatment.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a partial transverse section of the same on the line $x x$ of Fig. 1. Fig. 3 is an enlarged sectional side elevation of the lower parts of two flues or channels. Fig. 4 is a transverse section of the same on the line $y y$ of Fig. 3. Fig. 5 is a sectional side elevation of the curtains for the flues or channels, and Fig. 6 is an enlarged side elevation of part of a carrier.

The drying in the open air of various products, especially of pottery articles, being to a most inconvenient extent dependent on climatic influences, this great drawback is generally sought to be obviated by drying such materials in closed spaces in which the temperature and supply of air can be artificially regulated. This mode of drying, however, involves relatively great expense and is by no means void of inconveniences. It has proved absolutely necessary that in order to conquer the difficulties connected with the systematic application of the counter-current the articles to be dried should be guided toward the air-current and the latter compelled to play about every single piece from all sides. The results attained in this direction are of a very unsatisfactory character, as in the respective arrangements hitherto known the warmer and drier, therefore lighter, strata of of air accumulate at the top regions of the

drying apparatus, and consequently fail to produce the desired effect on the material placed below. Moreover, the moving of the material in a horizontal plane necessitates considerable waste of power. The drawbacks above referred to are intended to be removed by the arrangement hereinafter described, which has for its purpose not only to conduct the material to be dried toward the warm air without expenditure of power, but also to divide the warm air into currents of small cross-section, specially of inferior height, and to allow such division to be with facility regulated during work, so as to preclude a separation of the warm and dry air strata within the single air-channels and cause every article to be exposed on all sides to the action of an air-current, the properties of which are in a proper ratio to those of the piece to be dried. It is obvious that with the movement of hot air in a large undivided space heat continually radiates from the sides of such space and the movement of the air causes the sides to come incessantly into contact with the new strata of the inclosed air. When, however, superposed passages or channels are arranged in juxtaposition, such radiation takes place from the top side only of the drying-furnace and can, moreover, be partially neutralized, as shown in Fig. 1. The air thus divided into currents of small cross-section imparts its heat very completely to the material to be dried. Loss of heat is almost absolutely excluded and the smallest quantities of heat can be utilized. The superfluous quantities of heat are thus sufficient, also, in unfavorable and cold weather without addition of any special appliances.

The movement, without expenditure of power, of the articles to be dried is produced by causing these articles to slide by their own weight down an inclined plane and retarding such movement by providing a horizontal plane as a continuation of the inclined plane. Furthermore, a contrivance is provided for conducting the warm and dry air in divided currents along every article to be treated, and for so regulating said currents as to cause the same to affect not only that side of the object which faces the current, but to come into uniform contact with the whole free surface of every object to be dried.

The improved drying stove or furnace is provided with a drying-chamber A, protected from the effects of the external air by means of suitable walls of low thermal conductivity.

5 The upper end of the drying-chamber is connected with a passage or chamber B, through which the articles to be dried are introduced into the drying-chamber A. The lower end of the drying-chamber A opens into a delivery-chamber C, through which the articles are removed after being dried. In the passage B is arranged a chimney D, through which the air and gases can escape.

15 The drying-chamber A is formed with a series of inclined flues or channels E, formed by a number of transversely - extending boards F and longitudinally-arranged partitions G, as is plainly illustrated in Figs. 1 and 2. The lower part of each channel E extends a short way horizontally to open into the delivery-chamber C to permit the operator to conveniently remove the dried article, and also to form a stop for the articles sliding down the inclined channels. The height and width of the channels E depend on the size of the articles to be treated and on the quantity of heat at disposal.

In each channel in the sides of the partitions G are secured a number of cleats H to form guideways, on which are adapted to travel carriers I, each supporting one or more articles J to be dried. On the front end of each carrier I is secured a curtain K, of canvas or other suitable material and adapted to hang freely downward in close proximity to the top of the next article below. (See Figs. 3 and 4. The lower end of each curtain K is preferably connected with a cord L, adapted to be fastened to a pin N, secured to the under side of the carrier I, as is plainly shown in Fig. 6. By adjusting the cord L on the pin N the curtain K may be raised or lowered, so as not to touch the articles on the next lower carrier. Similar curtains O are placed at suitable intervals on the under side of the transverse boards F, as is plainly shown in Figs. 3, 4, and 5, the said curtains being connected by a short rearwardly and upwardly extending cord P, with a rope Q, fitted to slide in suitable eyes R, secured to the under side of the boards F, said ropes Q extending into the passage B to be adjusted by the operator, in order to raise or lower the several

curtains O, according to the height of the articles under treatment.

55 The air for heating the drying-chamber A can be generated in any suitable manner and introduced either through the delivery-chamber C or by means of pipes S, arranged in each flue E, as indicated in Fig. 3. The boards F may also be perforated at their horizontal part and connected with a suitable source of air-supply coming from below from a suitable furnace.

65 The carriers I support the articles to be treated and are introduced from the passage B into the various flues or channels E, the carriers resting on opposite cleats H and sliding down the same until they reach the horizontally - extending part of the flue. The heated air coming from below through the several flues or channels E travels in an opposite direction to the movement of the article to be dried, so that the latter is heated uniformly. It will be further seen that the air at the lower ends of the channels E is of a higher temperature than that at the upper ends near the passage B, so that the articles to be dried are gradually subjected to increasing heat.

80 The various curtains K and O serve to regulate the currents of air passing through the channels E, said curtains being adjusted so as not to touch the articles under treatment.

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

1. The combination, with the drying-flue, of a series of transverse depending connected curtains therein and means for simultaneously operating said curtains, substantially as shown and described.

2. The combination, with the drying-flue, of a series of depending transverse curtains, a strand extending through the flue over said curtains, and the short cords P, connecting all of the curtains with said strand for simultaneous operation, substantially as shown and described.

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

ALBERT SCHAAF:

Witnesses:

R. DEINLER,
G. MITZEL.