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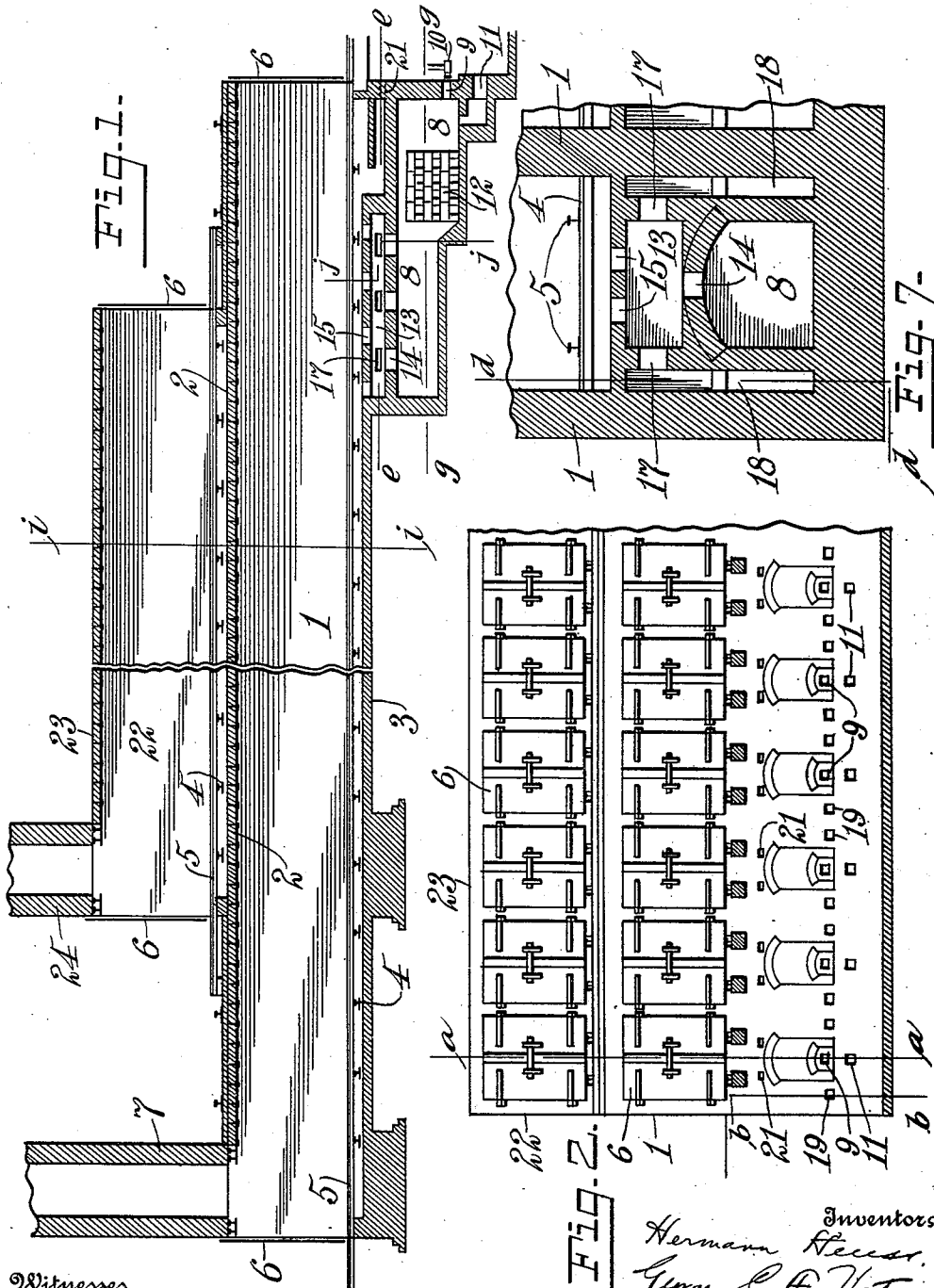
DRIER FOR CLAYWARE.

APPLICATION FILED APR. 5, 1911.

1,007,565.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 1.



Witnesses
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Fig. 2.

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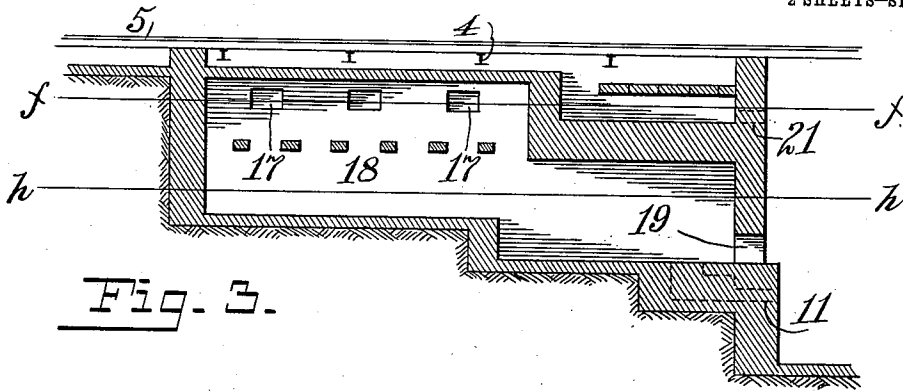


Fig. 3.

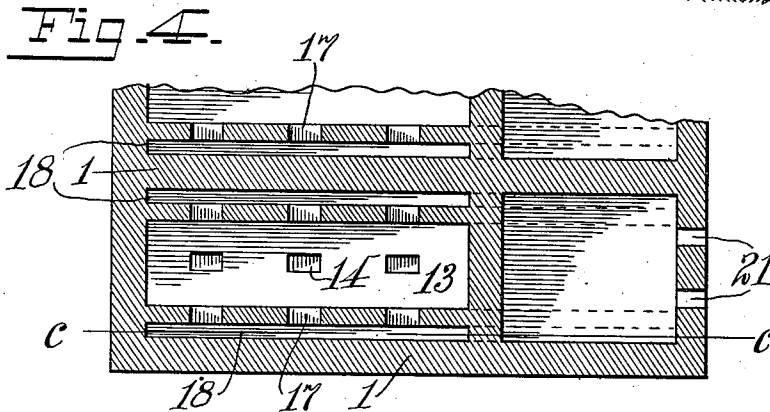


Fig. 4.

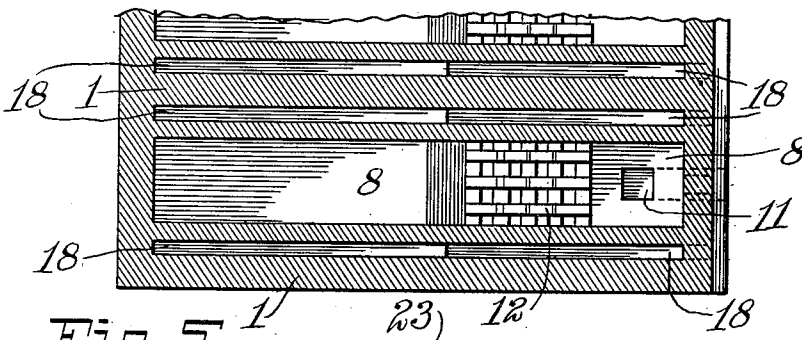


Fig. 5.

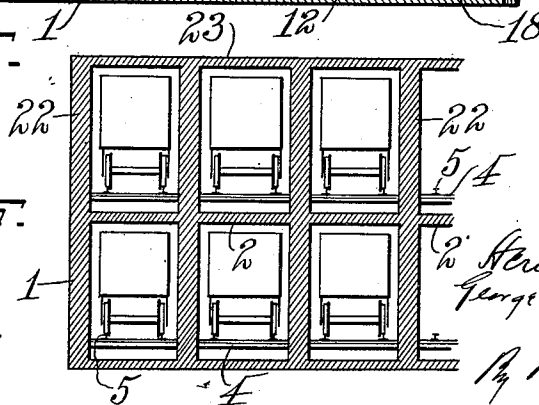


Fig. 6.

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UNITED STATES PATENT OFFICE.

HERMANN HEUSS AND GEORGE C. F. VATER, OF DAYTON, OHIO, ASSIGNORS TO THE
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DRIER FOR CLAYWARE.

1,007,565.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed April 5, 1911. Serial No. 618,988.

To all whom it may concern.

Be it known that we, HERMANN HEUSS, a citizen of the Republic of Switzerland, and GEORGE C. F. VATER, a subject of the Emperor of Germany, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Driers for Clayware; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in driers for eliminating the excessive moisture from clay ware preparatory to burning.

The object of the invention is to provide a drier of the above type in which liquid fuel, such as oil or gas which contains no constituents injurious to the clay, may be used, and which will allow the products of combustion to come in direct contact with the ware.

Another object of the invention is to provide a drier in which the heat radiating from the direct or primary fired tunnel is utilized in another tunnel.

Referring to the annexed drawings, Figure 1 is a longitudinal, vertical, sectional elevation of the drier on the line *a a* of Fig. 2, with intermediate portions broken away; Fig. 2 is an elevation of the furnace end of the drier; Fig. 3 is a section on the line *b b* of Fig. 2, *c c* of Fig. 4, and *d d* of Fig. 7; Fig. 4 is a section on the line *e e* of Fig. 1 and *f f* of Fig. 3; Fig. 5 is a section on the line *g g* of Fig. 1 and *h h* of Fig. 3; Fig. 6 is a section on the line *i i* of Fig. 1; and Fig. 7 is a section on the line *j j* of Fig. 1.

Throughout the specification and drawings similar reference characters indicate corresponding parts.

Referring more particularly to the drawings, 1 represents the sides, 2 the top and 3 the bottom of a drier tunnel which receives the clay ware to be dried. While in the drawings a plurality of tunnels thus constructed are illustrated, it will be understood that all of the tunnels and coacting devices are of identical construction; consequently only one will be described. Mounted

above the bottom of the tunnel on cross rails 4, is a track 5 on which trucks (not shown) supporting the clay ware to be dried are run. The ends of the tunnels are provided with doors 6 which are closed when the ware therein is being dried. One end of the tunnel communicates with a furnace constructed as follows.

Mounted below the end of the tunnel, opposite the stack, is a furnace 8 provided with an opening 9 adapted to receive a burner 10 for either oil or gas. The furnace 8 is also provided with an opening 11 in the bottom thereof which allows sufficient air to enter the furnace to support combustion therein. The furnace 8 may be provided with checker work 12 which is instrumental in maintaining sufficient heat within the said furnace to secure proper combustion of the oil or gas. Above the rear end of the furnace 8 is a mixing chamber 13 which communicates with the furnace through ports 14, and with the tunnel through ports 15. The products of combustion from the furnace pass through the ports 14, chamber 13 and ports 15 to the interior of the tunnel where they come in contact with the ware to expel the excessive moisture therein. However, as the temperature of the products of combustion leaving the furnace is at a point which would cause injury to the ware, sufficient air is mixed with the said products of combustion as they pass through the mixing chamber, to lower their temperature to operative limits. The air for this purpose may enter the mixing chamber 13 through ports 17 in the side thereof, which ports communicate with passageways 18 along the sides of the furnace. The forward ends of the passageways 18 are provided with openings 19 which receive air from the outside atmosphere. The tunnel may also be provided with openings 21 at the furnace end above the furnace, which admit air to the tunnel without being previously mixed with the products of combustion, but which is heated by radiation from the furnace below. This air may be used to further reduce the temperature of the products of combustion.

It will be seen that in a drier thus constructed, the high temperature of the products of combustion, which is necessary to secure complete combustion, is reduced to a point which will not injure the ware, by mixing the same with a suitable amount of

air. As the products of combustion come in direct contact with the clay ware, the maximum amount of heat will be extracted therefrom, thereby maintaining a high efficiency.

5 After the drying medium passes through the clay ware, it exhausts through the stack 7, thereby maintaining a circulation within the tunnel.

10 In driers of this type, considerable heat is radiated from the top thereof, due to the fact that the heated gas will rise to the top of the tunnel. To utilize this heat, an upper tunnel is mounted above the lower tunnel. The upper tunnel consists of side walls 15 22 which are a continuation of the walls 1 of the lower tunnel, and of a top 23. This upper tunnel is also provided with doors 6, and a stack 24 which creates a circulation. The top 2 of the bottom tunnel forms the 20 floor of the upper tunnel, and as said top 2 can be made comparatively thin, sufficient heat will be radiated to dry light or hollow clay ware within the upper tunnel.

Having described our invention, we claim:

25 1. In a drier, a drying tunnel, a stack communicating with one end thereof, a furnace mounted under the opposite end of the tunnel, and communicating therewith, a mixing chamber mounted above the rear end of 30 the furnace below the tunnel, said chamber being provided with ports which communi-

cate with the furnace and with the tunnel, passageways on the sides of the furnace, and mixing chamber, provided with ports which 35 communicate with the atmosphere and with the mixing chamber, whereby the products of combustion are mixed with air as they pass through the mixing chamber, substantially as specified.

40 2. In a drier, a tunnel, a stack communicating with one end thereof, a furnace mounted under the opposite end and communicating therewith, a mixing chamber between the tunnel and the furnace, said mixing chamber being provided with two series 45 of ports, one series of which provides a communication between the furnace and the tunnel, and the other series of which provides a communication between the outside atmosphere and the mixing chamber, the end of 50 said tunnel opposite the stack being provided with air openings located above the furnace, whereby the products of combustion are mixed with air before entering the tunnel.

In testimony whereof we affix our signatures, in presence of two witnesses. 55

HERMANN HEUSS.
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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."