

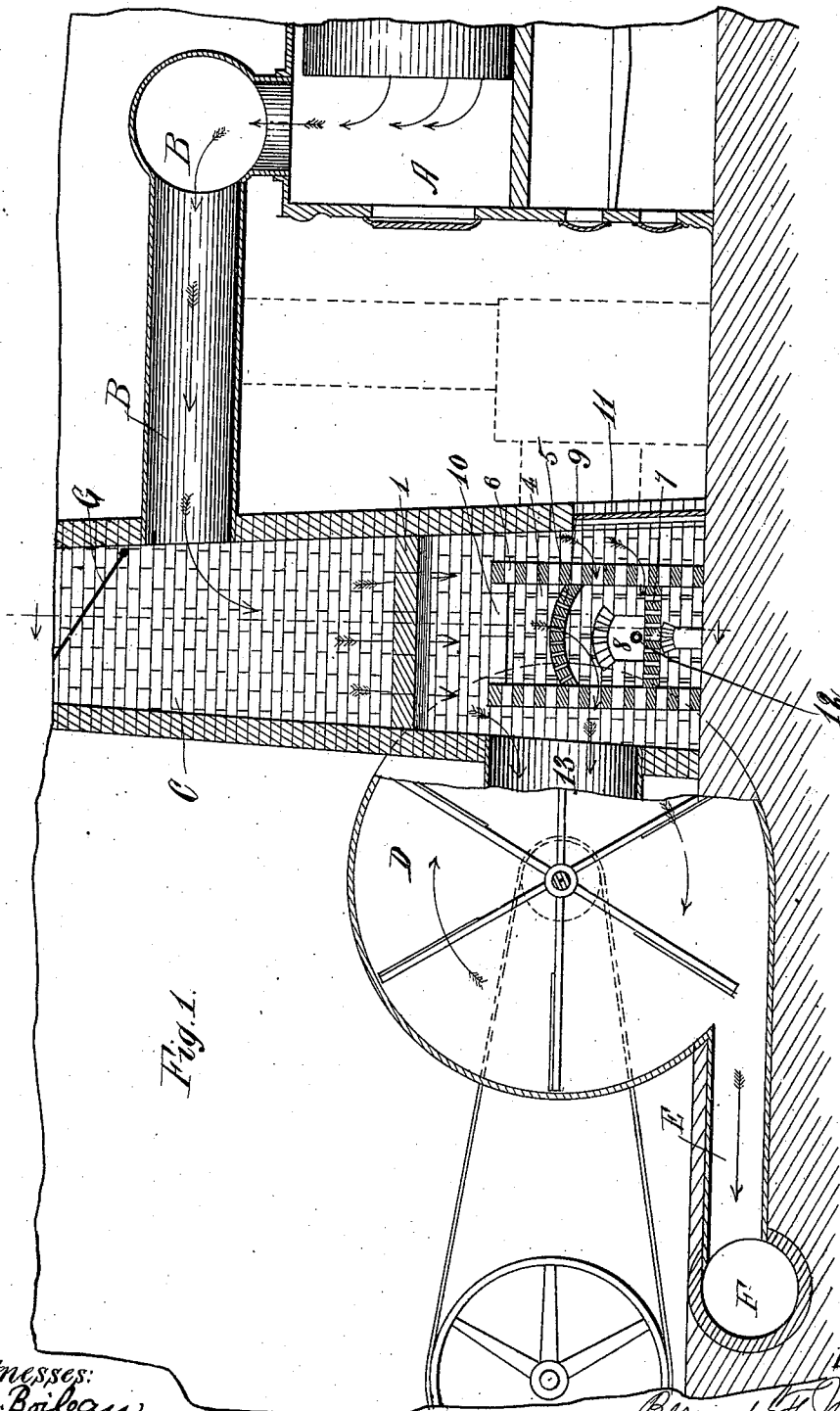
(No Model.)

B. F. WEBER.
BRICK DRIER.

3 Sheets—Sheet 1.

No. 576,639.

Patented Feb. 9, 1897.



Witnesses:
E. J. Bailean
W. B. Snowhook

Inventor:
B. F. Weber
By *Rudolph Wm. Lutz*
Attorney.

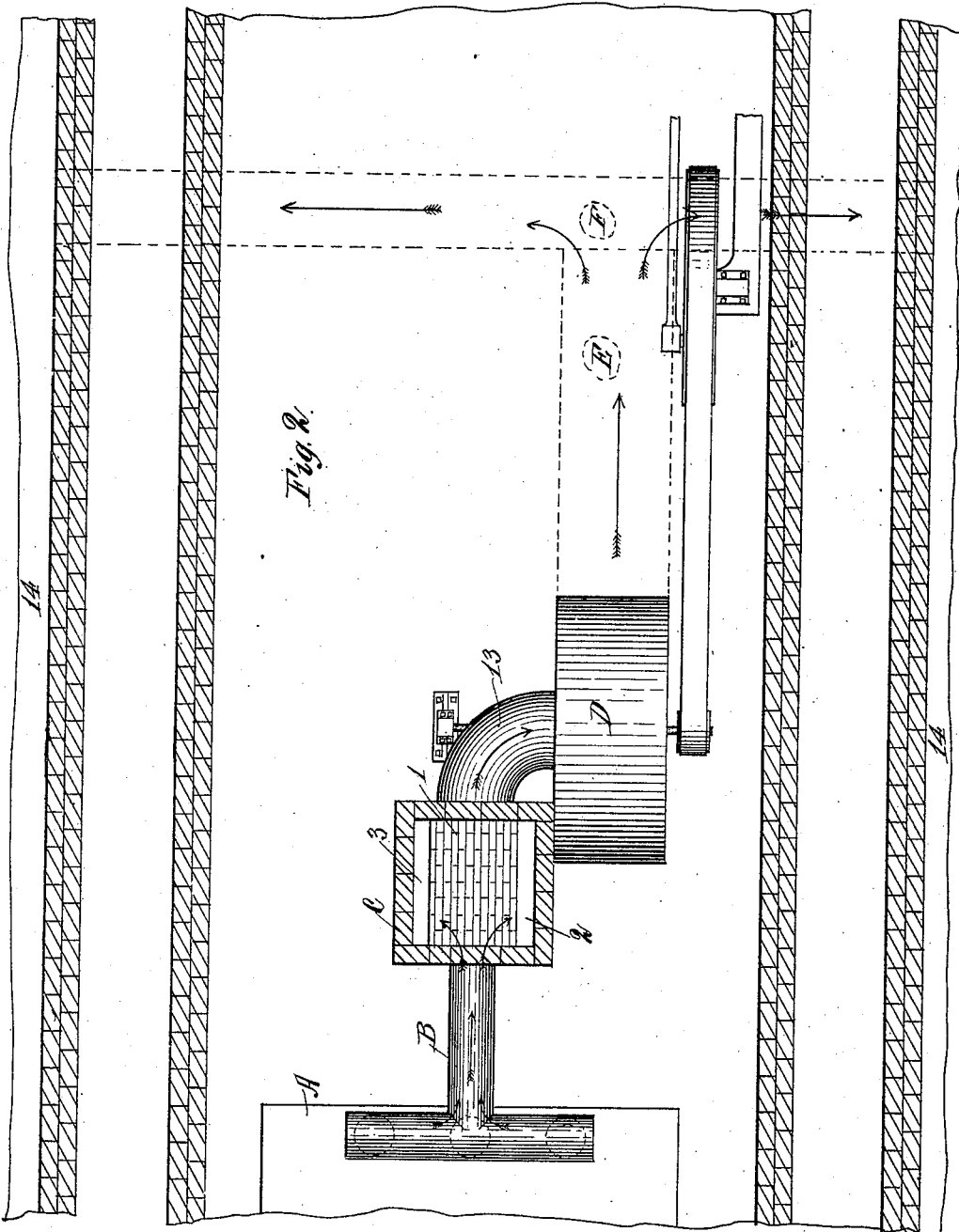
(No Model.)

3 Sheets—Sheet 2.

B. F. WEBER.
BRICK DRIER.

No. 576,639.

Patented Feb. 9, 1897.



Witnesses:
Albert Pophine
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Inventor:
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By *J. L. Browne*
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(No Model.)

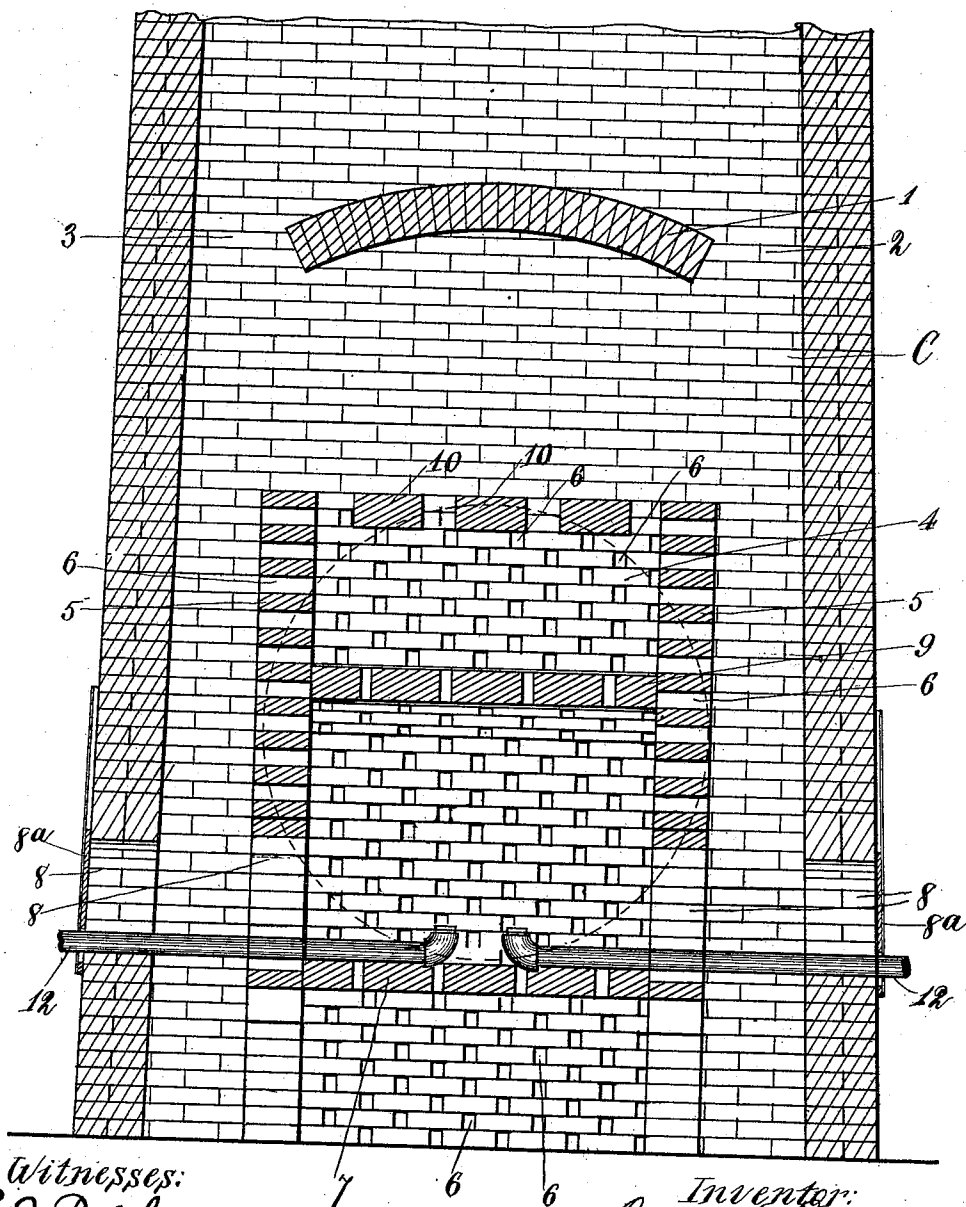
B. F. WEBER.
BRICK DRIER.

3 Sheets—Sheet 3.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

BERNARD F. WEBER, OF CHICAGO, ILLINOIS.

BRICK-DRIER.

SPECIFICATION forming part of Letters Patent No. 576,639, dated February 9, 1897.

Application filed November 1, 1895. Serial No. 567,605. (No model.)

To all whom it may concern:

Be it known that I, BERNARD F. WEBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Processes of and Apparatus for Drying Bricks, Tiles, Lumber, &c.; and I do hereby 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.

My invention relates to a novel construction in a process of and apparatus for drying bricks, tiles, lumber, &c., the object being to provide a device of this kind of simple and durable construction and efficient and economical operation; and it consists in the features of construction and the various steps of my process hereinafter fully described and specifically claimed.

My invention consists mainly in utilizing the heated gases arising from the boiler-furnaces for drying purposes and in subjecting said gases to great heat before the same are introduced into the drying-chambers, whereby all the inflammable gases and smoke will be consumed and a greater degree of heat imparted to the incombustible gases—such as carbonic-acid gas and nitrogen—remaining and which are introduced into the drying-chambers. To this end I employ a pressure-blower, which draws the gases downwardly through the stack or chimney and delivers the same into the drying-chamber.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in vertical longitudinal section of a boiler and engine room and stack provided with the devices for carrying out my process. Fig. 2 is a top plan view of the same on a reduced scale. Fig. 3 is a detail view of the stack on an enlarged scale.

Referring now to said drawings, A indicates the battery of boilers, and B the ducts leading from the upper portion thereof to the stack C, to lead the smoke into the same.

D is a pressure-blower whose inlet end is connected with said stack near the lower end thereof and whose outlet or delivery end is connected with the underground passages or ducts E and F.

Said stack or chimney C is provided with

a damper G, of any suitable construction, above and with an arch 1 below the inlet of said duct B into said stack, said arch 1 extending between two of the walls of said stack and leaving spaces 2 and 3 between the said arch and the other walls of said stack or chimney. A furnace 4 is built in the lower portion of said stack below said arch 1 and consists, preferably, of four walls 5, of fire-brick, erected equidistant from the walls of said stack, said walls 5 being provided with interstices 6 between the bricks composing the same to allow a free circulation of air and gases between the same. Said furnace is further provided with what may be termed a "grate" 7, which consists of an arch of fire-brick extending between the walls 5 of said furnace and provided with interstices 6 between the bricks composing the same in the same manner as said walls 5. Said stack and furnace are provided with openings 8, through which the fuel is fed to said furnace, on each side, the lower wall or floor of said openings being flush with the upper face of said grate 7. Said openings 8 in said stack are provided with sliding doors 8^a, by means of which the amount of fresh air fed to the fuel is regulated. An arch 9 extends between the walls of said furnace above said openings 8 and below the upper end of said furnace, said arch being also provided with interstices between the bricks composing the same. A series of flat arches 10 extend across the upper end of said furnace, and the space between the same and said arch 9 I contemplate filling with broken bricks, &c. Said stack or chimney C is also provided with a door 11, leading into the boiler-room.

It will of course be understood that any kind of fuel may be used in said furnace 4, but I prefer to employ hydrocarbon-burners of any suitable construction, as the same give a very high degree of heat and a constant flame which will reach every portion of said furnace. I therefore provide pipes 12, extending into said furnace through said openings 8, which connect the hydrocarbon-burners (not shown) with a source of supply of oil.

A pipe 13 connects said stack at a point opposite said furnace 4 with a pressure-blower D, by means of which the air and gases in said stack are drawn therefrom and forced

into the underground passages or ducts E and F, which lead therefrom to the drying-chambers 14, which may be of any suitable construction.

5 The smoke and gases are drawn from the boiler-furnaces through the boiler-tubes and pass through said duct B to the stack C and thence downwardly through the spaces 2 and 3 on each side of said arch 1 into the lower
10 portion of said stack, where they come in contact with the hot walls of said furnace 4 and pass through the interstices in the walls thereof. In this manner said smoke and gas are heated to a high degree and the combustible portions thereof consumed. A sufficient
15 amount of air is fed through said openings 7 to aid such combustion. In this manner it will be seen that the incombustible gases or products of combustion will be most economically
20 heated to a high degree, as they are already quite hot at their entrance into said stack. In this manner all the heat from the boiler-furnace is utilized and only a slight additional expense is required to heat said gases to a
25 higher degree. After said gases have been so heated by said furnaces 4 they are forced by said blower D into said ducts E and F and into said drying-chambers 14.

30 In dotted lines in Fig. 1 I have shown the furnace built adjacent the stack and connected therewith and with said ducts B, as I contemplate employing this construction where it may be impracticable to build the furnace within the stack. It will of course

be understood that the blower or exhaust-fan 35 may be connected directly with the furnace independently of the stack, as shown in dotted lines in Fig. 1, though it is unnecessary to run the connecting-duct through the stack.

40 It will of course be understood that I do not wish to be limited to the exact construction herein shown and described, as I contemplate varying the same to suit various requirements without departing from the spirit of my invention.

45 I claim as my invention—

In an apparatus of the kind specified, a chimney provided with a damper above the point of entry of the gaseous products of combustion, an arch below said point of entry, 50 openings at the sides of said arch, a furnace below said arch comprising four perforated walls of brick, a grate consisting of brick with interstices between the same, a perforated arch above said grate, and a hydrocarbon- 55 burner between said grate and said arch to heat said bricks to a high degree, and means for drawing said gaseous products of combustion through said interstices of said furnace to superheat said gases and force them into a 60 drying-chamber, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD F. WEBER.

Witnesses:

RUDOLPH WM. LOTZ,
E. J. BOILEAU.